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CONTENTS

	PAGE
Editorial Notes	225
American Railway Research Arrangements	227
Population and Travel Facilities	228
Ambulance Trains on the British Railways	229
Gasification of Coal	230
Letters to the Editor	230
The Scrap Heap	232
Overseas Railway Affairs	233
Modern British Track Development	234
Progressive Boiler Repairs at Gorton Works, L.N.E.R.	236
Personal	239
Transport Services and the War	241
Stock Market and Table	248

DIESEL RAILWAY TRACTION SUPPLEMENT

The September issue of the THE RAILWAY GAZETTE *Supplement, illustrating and describing developments in Diesel Railway Traction, is now ready, price* 1s.

GOODS FOR EXPORT

The fact that goods made of raw materials in short supply owing to war conditions are advertised in this paper should not be taken as indicating that they are available for export

NOTICE TO SUBSCRIBERS

Consequent on the paper rationing, new subscribers cannot be accepted until further notice. Any applications will be put on a waiting list and will be dealt with in rotation in replacement of subscribers who do not renew their subscriptions

POSTING "THE RAILWAY GAZETTE" OVERSEAS

We would remind our readers that there are many overseas countries to which it is not permissible for private individuals to send printed journals and newspapers. THE RAILWAY GAZETTE *possesses the necessary permit and facilities for such dispatch.*

We would emphasise that copies addressed to places in Great Britain should not be re-directed to places overseas

TO CALLERS AND TELEPHONERS

Until further notice our office hours are:
Mondays to Fridays 9.30 a.m. till 5.30 p.m.
The office is closed on Saturdays

ANSWERS TO ENQUIRIES

By reason of staff shortage due to enlistment, we regret that it is no longer possible for us to answer enquiries involving research, or to supply dates when articles appeared in back numbers, either by telephone or by letter

ERRORS, PAPER, AND PRINTING

Owing to shortage of staff and altered printing arrangements due to the war, and less time available for proof reading, we ask our readers' indulgence for typographical and other errors they may observe from time to time, also for poorer paper and printing compared with pre-war standards

Transport After the War

THE future of transport in this country is becoming a matter of more lively concern with the progress of the war, and the possibility that it may shortly become necessary to make a decision on a matter which will have its repercussions on all sections of the community. Increasing attention is being given to transport problems in the daily and weekly press. *The Times* of September 2 published an article headed "Transport After the War—A National Policy to Meet Public Needs" on its main news page, in which it was pointed out that the most complex issue is the solution of the road-rail problem, and on this hangs the success or failure of a national transport policy. Any transport policy must have regard to the wider aim of full employment and, so far as possible, must be instrumental in securing it. More than ever before transport must have a vital place in general Government policy. It is pointed out, too, that there can be no doubt that the railways will be forced, on the ground of "hard necessity," to demand increased charges, unless the competitive conditions can be balanced and they can obtain elsewhere the earnings they need to make the industry self-supporting and allow scope for development. For a year or two after the war conditions might be such as to mask this root issue, just as after the last war it was hidden for a time by the railway amalgamations, but this could be only a temporary phase.

Productivity of Transport

The Economist of September 2 also had an article—apparently the first of a series—on "The Future of Inland Transport." It pointed out that, in theory the transport problem is no different from that of any other financially independent branches of an industry producing similar goods or providing similar services. It is one of adjustment to changes in technique and costs. Normally, the adjustment takes place, or it should take place, through the price mechanism, with the consumer as the final arbiter. The problem of productivity is to speed up the adjustment. In practice, however, transport has characteristics that render the problem of adjustment peculiarly complex. Without a careful examination of the technical and economic facts of transport it is impossible to devise the kind of policy likely to ensure the most rapid increase in productivity. One of the characteristics of public transport that must influence the formation of policy is that the various means of transport are not competitive over the whole field of their operations, and this should be one of the foundations on which a policy for transport should be erected.

G.N.R. (Ireland) Developments

Mr. G. B. Howden, General Manager of the Great Northern Railway Company (Ireland), in a recent interview with a representative of *The Irish Times*, outlined a far-reaching scheme of post-war transport development proposed by his company. As mentioned by the Chairman at the annual meeting in February, a special committee of experienced officers was appointed by the directors early in the present year for the purpose of making a thorough examination of the present equipment for, and methods of operating, both railway and road traffic. This committee virtually has concluded its investigations, and a very comprehensive report setting out its views and recommendations is now being considered. In the developments foreshadowed the diesel train will play its part. More frequent and shorter trains between Dublin and Belfast are visualised, instead of the present long and heavy trains running at infrequent intervals, and these shorter trains will considerably expedite the Customs examination. An increase of door-to-door facilities for goods traffic is intended, and there should be a great improvement in the design of passenger and goods rolling stock. Faster and more frequent services, and the much-extended use of all methods and appliances for reducing time and effort in carrying out transport operations are also aimed at. During the war years the company has expended out of revenue £212,000 on capital works, including rolling stock and the modernising of facilities for public use, and these and the proposed new facilities should give the company a strong claim to future recognition and support.

The Gauge & Toolmakers' Association

Over one hundred manufacturing undertakings have joined the Gauge & Toolmakers' Association Limited, which was founded two years ago, at the request of the Ministry of Supply, to represent the interests of manufacturers of gauges and measuring equipment, jigs, and fixtures, special tools, press tools, moulds, and dies. A central national organisation has been established with the object of effecting co-operation between member firms. The Association has established co-operative and cordial relations

with the Machine Tool Control and other branches of the Ministry of Supply, and with the Service Departments. Another of the Association's activities is giving assistance on technical and industrial problems and developing a common commercial and trade practice. An endeavour has been made to ascertain the post-war requirements of a number of countries for the products of the members of the Association, and with the knowledge it has gained it is seeking to determine how it may best extend British export trade in these items of equipment. The President of the Association is Mr. H. H. Harley, Chairman & Managing Director of the Coventry Gauge & Tool Co. Ltd., and the Chairman is Mr. F. W. Halliwell, of Gay's (Hampton) Limited. The Secretary is Mr. Gilbert T. Beach, whose offices are at Standbrook House, Old Bond Street, London, W.1.

Rhodesia Railways' Progress

A further improvement in the results from railway operations is shown in the report of the Rhodesia Railways Limited for the year ended September 30, 1943. There were increases under all the main heads of traffic and a satisfactory advance in the working surplus was obtained after full provision for expenses, depreciation and renewals.

	1941-42	1942-43
	£	£
Passenger revenue	723,446	842,945
Goods revenue	4,887,969	4,981,379
Road motor services	80,522	90,031
Gross revenue	6,002,993	6,242,237
Working expenditure	3,446,333	3,618,765
Surplus on working	2,556,660	2,623,472

In the net revenue account a special credit is shown of £223,722 representing provision for taxation of the previous year not required. This includes a refund to the company by the Southern Rhodesia Government of £170,386 paid as Excess Profits Tax in the previous year. As legislation now provides that any money realised beyond the standard revenue required for the reserve fund—which fund now stands at its ceiling—shall go into the Rates Stabilisation Account, the benefit of this exemption from E.P.T. goes to the railway users. The amount available for dividend is again £125,000, and the dividend on the ordinary capital is 25 per cent., less tax at 5s. 5·74d. in the £1.

Pullman Bows to the Inevitable

After careful consideration of the position, the directors of Pullman Incorporated decided not to appeal to the Supreme Court against the Decree entered on May 8 by the District Court at Philadelphia directing the company to relinquish either its operating or its rolling-stock manufacturing business, on terms set out on page 102 of the August 4 issue of *The Railway Gazette*. In a letter to the stockholders they recalled that, at the hearing of the case, the Department of Justice had demanded that Pullman should not even be allowed freedom of choice, and they considered that the liberty to decide which side of the business to retain, that had been conceded by the District Court, with one judge dissenting, might be jeopardised if, on appeal, the Supreme Court were to share the dissentient judge's view. Further, the prosecution of an appeal would have prolonged the uncertainty of thousands of Pullman employees as to their future, and would have hampered buyers of rolling stock in their dealings with the Pullman-Standard Car Manufacturing Company. The Pullman directorate therefore decided to bow to what appeared to be the inevitable, and has now chosen to relinquish its operating business and retain vehicle manufacture, as we recorded briefly last week. According to the Decree, the parent company has until October 5 to submit to the District Court its plans for the separation.

British Permanent Way Development

The keynote of recent innovations in British permanent way maintenance and design has been increased mechanisation to prevent a rise in total cost resulting from the rise in the cost of labour. Many of the changes in practice have been introduced with the object of reducing unit costs, and it is possible that the post-war years will see more work done by specialised mechanised gangs, leaving to the length gang patrolling duties and the correction of minor defects. On pages 234 and 235 we publish an abstract of a Paper prepared for the Diamond Jubilee of the Permanent Way Institution by Mr. W. K. Wallace, Chairman, R.E.C. Engineering Committee, and Chief Civil Engineer, L.M.S.R., in which he points out that the demand on the track made by traffic has increased enormously in the past 20 years, first in speed of both passenger and goods trains, and, during the war, in volume of traffic. Among the developments which he records as meeting modern requirements both in regard to traffic and also maintenance cost, are transition curves for high speed, mechanical tamping, ballast cleaning, and weed killing. Wartime timber shortage has brought to the front the question of substitute materials, but the continued use of concrete, which has been proved satisfactory, at any rate in secondary lines, is entirely a question of cost when suitable timber again becomes available in quantity.

Clean Ballast

One detail of permanent way, of which in recent years the importance has been realised more fully than ever previously, is ballast. It is not merely that the need for adequate depth of ballast is recognised, but also that the ballast cannot fulfil its function unless it is kept properly clean. Dirty ballast is caused by cinders from locomotives, coal dust and other matter dropped from wagons, windblown dirt from adjacent land, disintegration of the ballast itself, mud working up from the formation, and other causes. It results in bad track conditions, irregular line and surface, damage to sleepers, fastenings, and rails, and heaving of the track from both frost and the growth of vegetation; in correcting such troubles maintenance costs are increased. In the United States the work of ballast cleaning is regarded as of such importance that complete travelling plants are now available for doing the work *in situ*. It is often regarded as adequate if the shoulders are cleaned, and the ballast in the spaces between the tracks, leaving the ballast in the "four-foot" between the sleepers; for if the voids in the ballast are large enough, these will enable the dirt in this part of the ballast to wash out. Considerable labour is saved if the cleaning of the "cribs" between the sleepers can be avoided, and this may also enable the intervals between the cleaning of the ballast in the shoulders to be shortened. The advantages claimed for regular ballast cleaning include a reduction in the labour needed for tamping low joints, less lining and surfacing of track, increased life of rails and sleepers, and conservation of the ballast itself.

Local Railway Museums

The interesting suggestion is contained in a Letter to the Editor from three readers (see page 230) that some old buildings of derelict railways might be preserved as museums, to contain small relics of the abandoned line on which they were situate. As an example, they quoted the tunnel on the ancient Avon & Gloucestershire Railway which was equipped for use as an air raid shelter. This is near Bitton, and is within easy distance of the Bristol-Bath Road, of Bitton itself, and also of Somerdale. The proposal involves quite a number of problems, such as those of maintenance and staffing, but it is suggested that local bodies of railway enthusiasts would often be willing to assume responsibility. One of the principal attractions of such a local and intimate museum is that it would be available to assist those wishing to explore the remains of a line. We have often wondered why the refreshment rooms which are built in the cutting of the old Croydon, Merstham & Godstone Iron Railway have not capitalised their unique location and made a point of catering for railway enthusiasts by preserving some relics, having literature and photographs available for sale, and affording facilities for viewing the 140-year-old overbridge in their grounds. There are those who regard "history" as an unnecessary adjunct of an utilitarian age, but surely it is just as desirable to preserve the relics of the early days of our pioneer railway system as it is to keep the remains of our mediæval architecture that the enemy has not destroyed or damaged.

High Frequency Radio for Railways

The experiments now in progress on American railways for the utilisation of wireless communication in railway operation are taking a number of different forms. The Baltimore & Ohio Railroad is experimenting, jointly with the Bendix Aviation Corporation, in the use of radio of very high frequency, similar to that used in certain types of aircraft. The Federal Communications Commission has granted permits for the construction of five radio transmission stations on the B. & O. main line between Baltimore and Pittsburgh. The characteristics of ultra-high frequency are that the transmission of signals is limited to a relatively short range, but in certain types of service this is an advantage, because with the highly-directional antenna systems now available, satisfactory communication can be more or less confined to the area desired, without causing interference with the systems in adjacent areas. In conjunction with frequency modulation, this principle allows a number of different systems to operate in a relatively small area without mutual interference. It is emphasised that safety of operation is one only of the advantages likely to accrue to railways from the use of radio; the major advantage by far is the expedition of train movements both on the main line and in marshalling yards. As yet, no frequency bands have been allotted permanently to the

American railways, as sufficient is not yet known of the railway requirements in this matter, neither is commercial radio equipment being produced at the present time that is suitable for railway use, but the experiments now in progress should make it possible to reach some definite conclusions at an early date.

■■■■

Loops in the St. Gothard Tunnel

Our Swiss correspondent writes that a signal box and loop lines are being provided in the centre of the St. Gothard Tunnel, to facilitate traffic movements. When these long tunnels were worked by steam the provision of intermediate signalling points presented great difficulties and the establishment of loop layouts there was not even contemplated. The abolition of smoke and fumes, however, makes all the difference and, in some of the long tunnels in Italy, loops and signal boxes were put in when electric traction was introduced. When the Simplon Tunnel was opened as a single line it had a signal box and crossing loop in the centre and special intermediate signalling locations were provided in the Hauenstein Base Tunnel, built to shorten the route between Basle and Olten. In a number of these Swiss installations, wheel counting apparatus has been used, because of the presence of steel sleepers, but what degree of reliability has been achieved with such devices there we are not in position to say. We believe also that tail signal-detection apparatus, introduced in Germany, has been experimented with. In some instances, however, as in the installation near Lucerne, wooden sleepers have been expressly laid over certain lengths of line to enable track circuit to be applied. We hope some Swiss engineer will see fit some day to describe all these experiments, as very little information has been given about them as yet.

■■■■

Home and Distant Signals in Italy

We referred recently to the practice long obtaining in Italy of mounting combined home and distant semaphores, on the same centre line, so that the distant arm is visible only when the home arm has been lowered and it is itself still in the caution position. At one time in Upper Italy the home arm moved through 60 deg. and the distant 45 deg. only, leaving both clearly visible when "off," but this arrangement was not continued on the introduction of standard methods throughout the country. As some interest has been expressed in the night aspects shown by these combined signals, we may explain that the yellow light was adopted in Italy many years ago. The home arm has a red glass in the upper, and none in the lower, spectacle opening, and the distant has no glass in the upper and a green one in the lower spectacle opening. When both arms are "on" the light shines through the clear opening in the distant and the red glass on the home arm. On the latter being lowered, a separate single yellow spectacle is moved in front of the lamp and the light is seen through this and the unglazed openings in the two-arm spectacles. When the distant is lowered this spectacle is swung aside and the lamp shows through the green glass in the distant and the clear opening in the home-arm spectacle. The small backlights for the three positions are green, violet, and white respectively.

■■■■

American Locomotive Developments

Despite the rapid increase in the popularity of diesel-electric power in the United States for high-speed passenger and heavy long-distance freight work, the protagonists of steam in that country by no means consider as inevitable a general change-over from the latter to the former. One smaller line, the New York, Ontario & Western, has decided on complete "dieselisation," as it is called, and for this purpose has ordered 37 diesel-electric locomotives of various sizes to supplement its present stock, after receipt of which no further steam locomotives will be used. Many of the bigger lines, and especially those which have made a close study of steam locomotive efficiency, are proceeding more cautiously. The New York Central System has taken an important step by ordering four 5,400 b.h.p. road freight diesels, of which the first is now in service, and has also on order two 6,000-b.h.p. passenger diesels which are to be tried against a new 6,000-b.h.p. passenger locomotive class now being designed jointly by the railway's mechanical department and a firm of outside builders. Most conservative of all, but renowned, nevertheless, for the efficiency of its steam locomotives—in the development of which its fine locomotive testing-plant at Altoona has played a notable part—the Pennsylvania Railroad is building in its own shops a turbine-driven steam locomotive of greatly increased power, which, doubtless, will be tried against the experimental 6-4-4-6 and 4-4-4-4 express passenger classes already in service. Another line of Pennsylvania development is a multi-cylinder 4-6-4-4 type intended to increase the speed of heavy freight haulage on this extensive system.

American Railway Research Arrangements

IN our August 11 issue we reviewed the Freight Progress Annual Number of the *Railway Age*, and mentioned that we might return to the subject of the research into transport problems which the Association of American Railroads is conducting in a manner that is at once thorough and expeditious. About two years ago the Association set up a Committee for the Study of Transportation under the chairmanship of Mr. R. V. Fletcher, one of its Vice-Presidents. A remit drawn in wide terms required the Committee to study the general economic growth of the United States and to investigate the trend of development of transport in all its forms after the war, so as to weigh up the effect of changing circumstances on the railway position. To carry out this complete stock-taking of transport features, no fewer than 15 sub-committees, with a total membership of over 100 experienced railwaymen, have been constituted. These sub-committees may be divided into four groups according to the field of their enquiries:—

(1) Accounting and statistics.
Finance.
Taxation.
Consolidation (or amalgamation).
(2) Operating, methods and procedure.
Traffic (commercial).
Public relations.
Engineering and mechanical research.
(3) Road motor transport.
Water transport.
Pipeline transport.
Air transport.
(4) Labour and personnel.
Legislation.
Economic study.

Though the sub-committee on Economic Study has been put last in this list, the surveys which it is making are of supreme importance. Under the guidance of Mr. J. V. B. Duer, Assistant to Vice-President, Pennsylvania, the sub-committee has to forecast the amount of traffic which the railways are likely to carry after the war and to specify the classes into which that traffic will fall. Working on estimates of gross national production in the peaceful future, it will have to decide how closely railway revenue ton-miles may be expected to follow a similar curve. As part of the general inquest, 39 special commodity studies are being prepared, region by region. The first report on cotton was finished some time ago and 8 or 9 other memoranda are probably now ready. For the further assistance of the main committee and of this sub-committee, a series of statistical and economic surveys dealing with such questions as population is being prepared under the supervision of Dr. J. H. Parmelee, Director of the Bureau of Railway Economics. In years to come we shall be interested to see whether the research bodies, with the aid of this elaborate statistical apparatus, succeed in prophesying correctly the new environment in which the railways will be operating.

In comparison the duties of the other sub-committees are restricted in scope. The Accounting & Statistics Sub-Committee has analysed recent progress in working methods and is wrestling with cost accounting, budgetary control and passenger traffic divisions. The Finance Sub-Committee is considering what amount of capital will be needed to improve railway working and equipment and how the money can best be raised. We are glad to see that American railwaymen are confidently looking forward to busy times ahead. They believe that large purchasing programmes will be necessary to repair the ravages of wartime ill-usage of railway property and to take care of new business.

The Taxation Sub-Committee is determining the extent to which railways are overtaxed in comparison with other industries. Readers will remember that in more than one article during the past twelve months we have referred to the abnormal increase in American railway taxbills. The Taxation Sub-Committee therefore might have been expected to demonstrate the extent to which railways are overtaxed in comparison with other industries and to suggest relief from specific imposts which are an unfair burden. The sub-committee has gone much further and has lodged a report outlining a wholesale revision of America's fiscal and tax system, condemned as "almost unbelievably bad." We venture to doubt whether the A.A.R. will be wise to sponsor a programme calling for a higher normal personal income tax, with a substantial lowering of personal exemptions, and other sweeping changes affecting taxpayers as a body. A new tax system may be highly desirable, but its design could be entrusted more appropriately to a board of enquiry representative of many independent financial and trading interests than to a sub-committee of railway tax commissioners, comptrollers and attorneys. The A.A.R. might make more progress by concentrating its energies on securing a few reforms which, by easing the financial position of the railways, would make it possible for them to improve their properties and so render efficient service to the public. An outstanding example of inequitable treatment is the taxing of maintenance funds earmarked for future use. In clean-cut cases of that description the A.A.R. would be on firm ground in pressing for an immediate change in practice.

XUM

The sub-committee on Consolidations is said to be well ahead with its inquiry. We are looking forward to its report, as between the two world wars little or no progress has been made with railway amalgamation in the States. For once we have left our American friends behind and discuss unification while they still debate the pros and cons of grouping.

The Operating and Traffic Sub-Committees are slow in reporting, but their subjects are complicated and apt to cause sharp differences of opinion. The question of freight rates, for example, arouses endless controversy, as we can judge from the time occupied by our Road & Rail Central Conference in attempting to reconcile the charges and conditions of carriage of the two sets of carriers. Both here and in America the opinion is widespread that greater flexibility is called for in fixing freight rates and that the railway classification of merchandise should be simplified. Some commercial railway officers in the States want to quote trainload rates: others favour "dual-minimum" rates to induce traders to load wagons to their full capacity and "part-wagon-load rates" are also proposed as a means of competing with the road hauliers who take comparatively small loads.

The sub-committee on Public Relations is examining the experience of 47 railways, the Pullman Company, the Railway Express Agency and 3 large air lines. So far it has put forward only the commonplace suggestion that the railways should have a programme to promote courtesy amongst their employees on the model of the Safety First campaigns. In a final report the sub-committee will surely deal with higher aspects of its subject and suggest methods for instilling into the minds of the thinking public a clear idea of the part which the railways play in furthering the national well-being. Years ago the late Mr. E. E. Loomis of the Lehigh Valley advocated the policy of taking the public into the confidence of railway managements and so removing prejudices inherited from the old days of unregulated competition between rival railway interests. It will be instructive to see how it is proposed to extend his pioneer work.

In engineering and mechanical research a definite step forward has already been taken. On the recommendation of the sub-committee the A.A.R. has authorised the establishment within the Association of a Department of Technical Research and has appointed Clyde Williams, Director of the Battelle Memorial Institute, Columbus, Ohio, as technical consultant on research matters. He is now busy with studies of lightweight wagons, motive power, and the metallurgy of rails. His activities do not supplant, but are in addition to, the research performed by existing engineering committees of the Association.

The Road Motor Transport Sub-Committee expects to report in October. Only of recent years have the American railways organised collection and delivery services by road vehicles. More than one railway made detailed inquiries about British cartage and "rail-head" arrangements before starting what was a new type of service for the States. More co-ordinated rail-road services are certain to be run after the war in America as well as in this country. There is more room for this type of working across the Atlantic owing to the low density of traffic on many lines. Of recent years the American Government has spent large sums on improving inland navigations. These waterways have diverted traffic from the railways by quoting rates which are based on operating expenses and do not take into account much of the capital expenditure on betterments. The taxpayers and not the users of the waterways pay a large share of the cost of conveyance by river or canal. The unfairness of this subsidised competition will presumably be emphasised in the reports of the sub-committee on Water Transport. A long statement about the Mississippi River is in draft and a study of the Erie Canal is in hand. The sub-committee is also examining the facts of coastwise and intercoastal transport by sea. During the war heavy tonnages of coal, coke, ore and other commodities have been transferred from steamship to rail. Just as coal passes by "convoy" trains from Northumberland and Durham to London and the south instead of going coastwise, coal has been railed from Virginia to New England instead of being shipped from Hampton Roads. The American railways handled 83 per cent. more wagons of coal, coke and ore in 1943 than in 1938 and hauled many of them for unusually long distances. The railways will lose the diverted traffic as soon as coastwise sailings are resumed, but they are entitled to consideration in other directions for using their resources to prevent a coal famine during the war years and we may expect the sub-committee to enlarge on this theme. In our March 17 issue we described the splendid work done by the railways in moving oil to the eastern seaboard until new pipelines could be constructed. Train loads of oil are now being hauled from Texas to the Pacific coast for the use of the forces fighting the Japanese. It is unfair that the railways should be expected to come to the rescue in every emergency unless they are given some shelter from pipeline competition in normal times. The Pipeline Transport Sub-Committee may have some solution of this problem to propose. An initial study compiled by the Air Transport Sub-Committee was reviewed in our May 26 issue. The sub-committee is now considering the vexed question of subsidies to air carriers.

The Labour & Personnel Sub-Committee appears to be mainly engaged in laying plans for meeting difficulties which will attend demobilisation. We are glad to see that the need for training schemes, both for men released from the forces and for new entrants into railway service is not being overlooked. The Legislation Committee looks at the whole field of transport with the object of framing measures which it recommends should be passed into law. As Mr. R. V. Fletcher takes the chair at its meetings, we shall be surprised if its report does not urge that all forms of transport should have equality in the matter of regulation, taxation and subsidies. Mr. Fletcher, who is an able lawyer, is strongly in favour of placing all transport agencies under the jurisdiction of a single regulatory body.

Naturally, the different sub-committees will review each other's conclusions so as to avoid the clashing of opinions on matters of common interest. The main Committee will then bring together the whole of the reports into one volume whose aim will be to ensure that "there will be adequate, dependable and serviceable transportation in the public interest economically and efficiently performed." This comprehensive report may be issued early in 1945. We cannot help admiring the frank and open manner in which the A.A.R. is carrying on this exhaustive inquiry. There is no secrecy about the character of the investigations or about the sources of information on which the various studies are based. The contrast with the attitude of the British railways is very marked. The Railway Companies' Association announced in January, 1942, that a planning committee had been set up under the chairmanship of Sir Ernest Lemon. It is known that Sir Ernest resigned and was succeeded by Mr. Ashton Davies, who has also retired. The business of the committee is treated as confidential and, so far as we are aware, there has been no official statement about the progress of its deliberations. We trust that the Committee is dealing with its remit on broad lines and is not spending time on details which can have little bearing on the future prosperity of our railways and might well be left in the hands of the appropriate departmental committees.

Population and Travel Facilities

A GOOD deal of thought is being devoted to the extension and improvement of transport facilities in the post-war planning of this country. For example, the plan designed to improve the amenities of London put forward by the London Regional Reconstruction Committee of the Royal Institute of British Architects, and that prepared by Mr. T. H. Forshaw, Architect to the London County Council, in association with Professor Patrick Abercrombie, both contain proposals which have as their object the extension of travel facilities in the metropolis. Superficially, it might be thought somewhat paradoxical to be planning for increased travel in an age when the trend of the population is downward, except for the upturn that is usually experienced in time of war. The question might well be posed as to whether new lines and improved facilities, and consequent increase in ability to carry a greater volume of traffic, might not result in waste or uneconomic expenditure, if by the time they are ready for use there are insufficient passengers to justify their provision.

In fact, an argument on this basis disregards several of the main factors which enter into the creation and maintenance of a heavy volume of travel. It has been found by experience, and it has been very marked in the London area, that the existence of facilities tends to create travel. For instance, it was shown in the report of the London Passenger Transport Board for the year to June 30, 1939, that for the previous twelve months the aggregate number of passengers carried represented travel at the rate of 444 journeys a year for each of the population served, which compared with 441 journeys for the year to June 30, 1938. The rate of growth in the population in the London Transport area had slackened during the year mainly because of the practical cessation of migration from the provinces. The increased rate of travel by the population was held to be indicative of the convenience, range and attractiveness of the services provided. Comparable figures for other large urban traffic areas of the world are not easy to obtain, partly because many transport undertakings serve the same area, and also because there has been a marked tendency for traffic areas to spread far beyond the purview of the municipal authorities

of the " city," but the following figures, compiled from a variety of sources, give a general idea of traffic trends:—

RIDES PER CAPITA OF POPULATION (BY RAILWAY, TRAM, AND BUS) IN THE WORLD'S LEADING CITIES

—	1923	1924	1925	1926	1927	1928	1936 or 1937
London	420	440	463	457	483	510	441
City of Vienna	—	—	—	—	—	—	274
Paris...	393	407	411	399	390	—	397*
Greater Prague	—	—	—	—	—	—	290
Greater Berlin	284	313	362	353	379	—	334
Greater New York ...	531	547	545	551	554	563	388†
Greater Stockholm ...	—	—	—	—	—	—	314
Hamburg Traffic Area ...	—	—	—	—	—	—	180

* Departement of the Seine
† New York City only, and therefore not comparable with previous figures

With a stationary or even a declining population, there may still be sound reasons for a very substantial increase in the growth of travel. This may fall largely under two heads: (1) an increase in the number of journeys made by individual passengers, and (2) the recruitment of additional travellers. It is probable that in London, and in other large centres of population, there is very. little scope for expansion under the second heading, mainly because travel has become common to all sections of the community. In the first category, however, there is very large scope for a greater use of travel facilities, both provided and projected. Within the last twenty years the travel habit has grown increasingly, and transcends anything that was envisaged a generation or so ago. Greater recreational inducements, higher incomes, and more leisure, have all contributed to this trend, and there would seem to be good reason to suppose that these inducements will be not less after the return of peace than they were before the outbreak of war. How quickly the habit of travel will expand will be conditioned, no doubt, in large degree by the facilities provided. In transport, unlike a good many industries, facilities often precede the demand for them, and, indeed, the demand is, in effect, a corollary of the facilities. A higher standard of education, for which plans are being made for the post-war years, will also have its effect in stimulating travel.

The Late Mr. R. M. Deeley

IN many ways Richard Mountford Deeley, formerly Locomotive Superintendent of the Midland Railway, was a remarkable man. He had a scholarly mind, and an extraordinarily wide range of interests in scientific subjects and research, which seemed to expand as he advanced in years. Even in his extreme old age his mind was active; at the age of **86** he published an interesting book on his family history, in which he showed a flair for genealogical research. During his retirement, from **1909** until his death in June last, he had interested himself in meteorology, and studied the subject with such thoroughness that in 1935, when in his **80**th year, he was able to publish " A Manual of the Principles of Meteorology," a useful textbook on the subject. As a scientific worker his fame chiefly rests on his researches on lubrication, on which subject he was author of a book which became a standard work of reference. He was also an authority on boiler-water treatment, and collaborated with Mr. L. Archbutt, Chief Chemist of the Midland Railway, in the design and construction of water-softening plant.

It is as former Chief Locomotive Superintendent and Mechanical Engineer of the Midland Railway that Deeley is best remembered. He had a very long association with the railway; his father was for some time attached to the accounts office staff. Before entering the works at Derby, however, Deeley was for two years a pupil of Mr. Edward B. Ellington, of the Hydraulic Engineering Company, Chester. In **1875**, when **20** years of age, he began a further pupilage under S. W. Johnson; and after passing through various workshops he was transferred to experimental work. Here he showed such promise that in **1880** he was appointed Chief of the Testing Department, a position he held for thirteen years. About this time he devised a torsion-testing machine which was subsequently described in the *Proceedings* of the Institution of Mechanical Engineers (1898).

In 1893 Deeley became Chief Inspector of Boilers & Electric Motors for the whole system, and in **1902** he was made Manager of Derby Works. Promotion then became rapid. After a few months he was appointed, under the Locomotive Superintendent, Electrical Engineer, with supervision of the electric lighting and power departments, both of which were then growing rapidly in importance. He became Assistant Locomotive Superintendent in July, **1903**, and six months later he succeeded Johnson as Chief Locomotive Superintendent & Mechanical Engineer.

By that time compounding had been given an extensive trial on the Midland; there were five such locomotives in service, all of the **4-4-0** express type; and the design was based on the three-cylinder system initiated by W. M. Smith, of the North Eastern Railway. Certain " teething troubles " still remained when Deeley took charge, but after modifications to the cylinders, the design was standardised as the principal express locomotive class for all the heaviest work on the Midland Railway; it was during Deeley's superintendency that the type established its reputation as the only outstandingly successful compound locomotive that this country has produced. In perpetuating this class, Deeley showed good judgment; but some of the other designs for which he was responsible were less fortunate.

Among these may be mentioned the engines of " **999** " class, now long defunct, which were intended to be as nearly as possible the " simple " equivalent of the **4-4-0** compounds. Wherever possible the dimensions were made identical; the idea was to facilitate direct comparisons between simple and compound locomotives from test results with the two types. The " **999** " class, however, had a form of valve gear due to Deeley which rather spoilt the comparison, as the compounds had Stephenson's link motion. Deeley's heavy passenger tank locomotives (**0-6-4**) were prone to oscillation, and even to derailment, and eventually came under the stigma of Governmental disapproval as a result of accidents when hauling trains at speed. In some respects they resembled their luckless contemporaries, the Hoy **2-6-2** tank engines on the Lancashire & Yorkshire Railway.

Deeley's tenure of office was short, its very brevity throwing it into sharper contrast with that of his long-established predecessor. He retired in **1909**, when only **54** years of age, and was succeeded by Henry Fowler, who was the last to hold that office before the Midland became part of the London Midland & Scottish Railway under the amalgamation schemes in **1923**. Deeley could now give full scope to his scientific talents, which must have been sadly cramped by the multitude of administrative duties which fall to a Locomotive Superintendent. He resumed his researches into lubrication, wrote technical papers and communications on physical science, and collected material for his treatise on meteorology. He was also a valued member of the Institutions of Civil and Mechanical Engineers. His long but active retirement was brought to a close by his death, which occurred in his ninetieth year, on June 19, **1944**. He had lived so long that it was difficult to realise that he had seen his successor rise to fame and subsequently relinquish his office, and, in fact, predecease him by some seven years.

Ambulance Trains on the British Railways

THE opening of the offensive in France has necessitated the running of a large number of ambulance trains for the conveyance of casualties to British and American military hospitals in Great Britain. The operation of these trains is not a new feature to the British railways; many such trains were run during the war of **1914-18** and a considerable number has been operated since the beginning of the present war.

From a railway point of view there are a number of special features to be taken into consideration in making arrangements for the working of these special trains. In the first place, suitable stabling points have to be found for the trains at stations or depots most suited to the operational requirements. This in itself has not been an easy problem to solve, because the siding accommodation of the British railways has been taxed to capacity in dealing with the unprecedented traffic created by the war effort. In some instances it has been impossible to make any of the existing accommodation available for the purpose, and new sidings have had to be laid in expressly for the stabling of ambulance trains.

A second important consideration has been the selection of railheads for dealing with the loaded trains. These have to be within convenient reach of the hospitals, but as these in many cases are in the seclusion of the country, it has not been easy always to select a suitable railhead from among the small wayside stations normally serving the district. Platform unloading is not always desirable or convenient at the smaller stations, especially on busy sections of line where occupation of a running road for a considerable period would have serious repercussions on the general working, and in such circumstances it has been necessary to schedule adjacent sidings for the reception of ambulance trains. Even at some of the larger stations it is necessary to deal with the trains in goods yard sidings with

road access, and the manipulation of the trains into these sidings is sometimes a complicated procedure involving the clipping of many pairs of points and other precautionary measures.

The utmost importance is attached to the timekeeping of these trains and everything possible is done to ensure punctuality. The trains more often than not are required to run at short notice, and point-to-point timings have been laid down to facilitate the running of the trains under these conditions. Close liaison has to be maintained with the hospital, and other authorities concerned, at detraining stations so that all necessary arrangements may be made for road ambulances and other features connected with the conveyance of the patients to hospital. Ambulance trains are fast becoming an all-too-familiar sight on the British railways and their operation has added yet another burden to the hard-pressed railway companies, but managements and staff alike count it an honour to do everything in their power to speed these "mercy" trains on their way and facilitate the prompt reception of the patients into the hospitals prepared for them.

Gasification of Coal

IN the popular press a good deal of attention has been given to the experiments which have been conducted in Russia on the gasification of coal seams *in situ*. It has been suggested that the success which has been achieved in that country opens up a vista of progress for humanity in general, and for this country in particular. In fact, as Mr. Harold Storey, Editor of our associated contemporary, *Colliery Engineering*, points out in a letter published in *The Times* of August 21, the Russian experiments have never been applied to coal seams of the first quality, such as the majority of the seams in this country, but rather to seams of inferior fuels which are not worth working by normal means. Contrary to what might appear to be the case at first sight, coal is a much more flexible form of energy than gas of low calorific value, such as is necessarily obtained by underground gasification methods, even if a pure oxygen blast is used for the partial combustion. Moreover, mined coal is capable of yielding more chemical products of value than are likely to reach the surface if the coal were gasified underground.

It must be borne in mind that even in gas producers specially designed for the purpose, the conditions for the necessary reactions to take place completely and continuously are extremely difficult to satisfy and maintain. In underground conditions, therefore, where there is no possibility of feeding the fuel uniformly, or of controlling the partial combustion excepting by very indirect methods, the difficulties of bringing about the ideal reactions are greatly intensified. So far as can be gathered from the accounts of the Russian experiments yet published, it would appear that although considerable success has been achieved in gasifying the volatile constituents, little has been encountered so far as the fixed carbon is concerned and this means that the bulk of the potential energy of the coal substance is not utilised.

The Russian experiments are being followed with the greatest of interest by British mining engineers and it is they, and they alone, who are capable of judging the practicability of applying underground gasification methods to British coal seams.

LETTERS TO THE EDITOR

(The Editor is not responsible for the opinions of correspondents)

The Railroad Signal

The New York, New Haven & Hartford Railroad Company,
Office of Electrical Engineer,
New Haven, 6, Conn. August 6

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—You may be interested in this *quasi* sonnet on the railway signal—in your Scrap Heap, perhaps.

Yours very truly,
SIDNEY WITHINGTON
Electrical Engineer

[We have pleasure in reproducing the sonnet on page 232.—ED. *R.G.*]

Colonial Wartime Railway Publicity

A. D. Survey,
East Africa Command.
June 19

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—The enclosed advertisements (from a series recently published in the East African press) may be of interest to you as illustrating the wartime difficulties of some colonial railways. With reference to the allusion to first and second class passengers, it must be borne in mind that journeys are long and slow (by home standards), so that the rolling stock is not quickly turned round; and that the maximum number of passengers aimed at in each compartment is four, so that there will be sufficient sleeping accommodation. This figure is sometimes exceeded in the daytime, but very rarely at night.

One drawing shows the heavy eight-coupled Garratt type of engine which is used for goods traffic between Mombasa and Nairobi, and for both goods and passenger traffic between Nairobi and Uganda. Another gives a front-end view of the "Mikados" which haul the Mombasa—Nairobi mail trains.

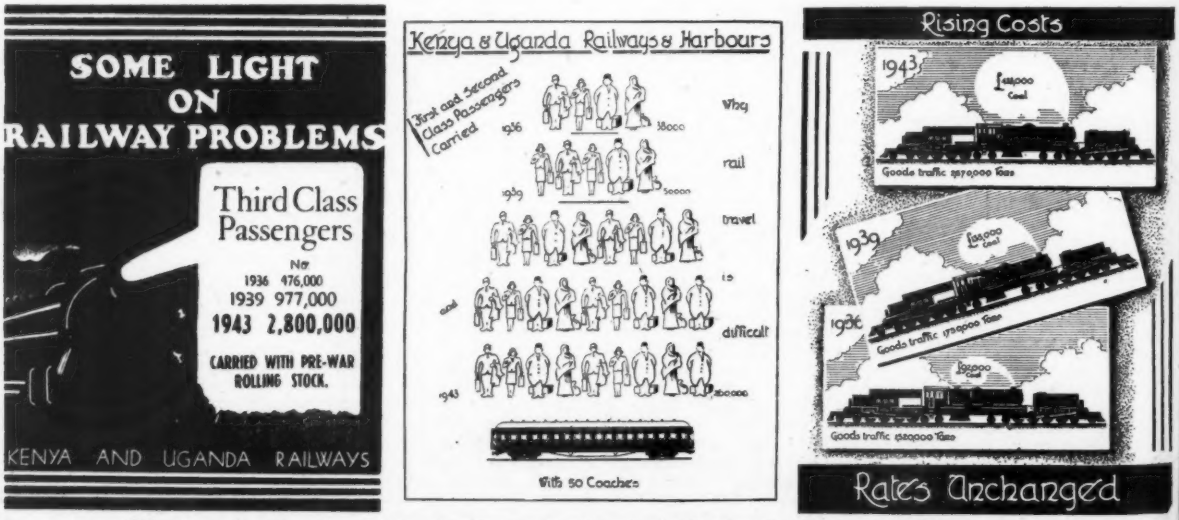
Yours faithfully,
J. C. FERGUSON

Local Railway Museums

17, High Road,
Ashton Keynes, Swindon. August 10

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—At the present time much is being considered about post-war reconstruction of Britain in its multitudinous aspects. The subject of transport, and in particular rail transport, will form a large part in the reconstruction period. The theme will naturally be that of modernisation and better methods, which no



Selection of posters issued by the Kenya & Uganda Railways & Harbours Administration

one would see retarded, if real progress is to be made. With the introduction of modern methods, some of the now derelict lines will become of still greater interest, apart from that which they now hold; therefore we believe to be essential a step to preserve some of the railway relics now standing; in fact, just as essential as the preservation of other old buildings, monuments, and such like for the benefit of posterity.

Old buildings, bridges, and other relics of the now abandoned and derelict railway systems would provide interesting material, and, whilst obviously whole lengths of derelict lines like the Weston, Clevedon & Portishead (which, incidentally, might be reopened on the style of the Swansea & Mumbles) cannot be preserved in their entirety, it would be possible to keep a building at one end, or at some convenient point on the route, and there display small relics, together with a map of the line and, perhaps, a short history, illustrated with photographs, old drawings, and period illustrations. Notices would be exhibited at public points drawing attention to the lines and museum.

For example, a recent exploration of the Avon & Gloucestershire Tramroad was rendered difficult owing to lack of information of the line (it is to be admitted the November, 1932, issue of *The Railway Magazine* came in useful in this particular case), and more so because some of the tunnels were blocked up. One of these, now used as an air raid shelter, near Bitton, could easily be converted into a museum, as just suggested, since it is within easy distance of the Bristol-Bath road, of Bitton, and also of Somerdale.

Again, the route of the Wolverton & Stony Stratford Tramway is not easily traced, and here the L.M.S.R. might step in and arrange, at Wolverton Station, to give to the interested public an idea of the tramway which once existed. Further examples may be found in the case of the Lynton & Barnstaple; the Dyke Branch of the S.R.; the Heck & Wentbridge; the Welsh Highland; and many others.

There arises, of course, the question of maintenance and expenses of such buildings and relics. It is to be feared a public company would be swayed by financial interest and, therefore, this work should not be trusted to such a body. A group of railway enthusiasts would be ideal in one sense, though it would need considerable backing and support and probably would have to make constant appeals for funds. Certain of the railway companies concerned might be responsible for lines which were their charge. The question remains, what will happen to lines such as the Avon & Gloucestershire and others? Perhaps the National Trust or H.M. Office of Works could take a hand in the matter.

We are, yours truly,

D. W. WINKWORTH. P. W. GENTRY. J. FLEET

L.N.E.R. Locomotive "Conversion"

London. September 4

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—I was interested in the description given in your September 1 issue of the conversion of the "04" class L.N.E.R. 2-8-0 tender locomotives which have been reclassified "01."

Isn't it time, however, that the L.N.E.R. dropped the use of the word "conversion" in respect of large-scale locomotive changes? Mr. E. Thompson, the Chief Mechanical Engineer, is really building new engines, but is using the sound parts of old locomotives, as, indeed, has been done often enough with all rolling stock. If Mr. J. G. Robinson had been in the land of the living he could hardly have found fault with the appearance of the new engine which has replaced that which he designed.

Yours faithfully,

SCRUTATOR

A Protest at Railway Propaganda

12, Thornhill Park, Sunderland. August 19

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—It was with surprise and the strongest disapproval that I gazed at the cover of the July-August number of your associated publication *The Railway Magazine* with a Government poster reproduced as the illustration.

The use of such a poster shows a lamentable lack of imagination on two points: first, that such a poster is quite superfluous because of the great difficulty and discomfort brought into present-day travel by the Government, and secondly, that arising directly out of the conditions of war which the Government have brought about, the need for a change of scene at least once a year is all the greater.

The person responsible for arranging *The Railway Magazine* front cover must be very like Sir Joseph Porter, "who never thought of thinking for himself at all." Such lack of imagination and want of thought is, of course, to be looked for in Government officials and other civil servants; they would not be civil servants if they had imagination. But I looked for something different, something higher and finer, amongst your staff.

Why, do you suppose, people are willing to stand for hours, shoulder to shoulder, in train corridors? Have you really any conception of the strain under which people are living at present?

Yours faithfully,

G. H. BARTRAM

[For the convenience of those who may not have seen the July-August cover design of *The Railway Magazine* that has so annoyed our correspondent, we publish herewith a small black and white

reproduction. Incidentally our correspondent is incorrect in referring to the offending design and warning as a Government "poster." It appeared in the early summer as an advertisement in the daily press, being issued by the Railway Executive Committee as Agents for the Minister of War Transport. Our correspondent's letter is, we think, interesting as showing the reaction propaganda advertising may have on some people. In our view the design was attractive and topical.—ED., *R.G.*]

Publications Received

A Handbook of First Aid and Bandaging. By Arthur D. Belilios, Desmond K. Mulvany, and Katharine F. Armstrong. Second Edition. London: Bailliére, Tindall & Cox, 7/8 Henrietta Street, W.C.2. 6¾ in. × 4¼ in. × 1 in. 514 pp. Fully illustrated. Price 4s. net.—The value of this handbook may be gauged by the fact that since its first appearance in June, 1941 (when we reviewed it in our issue of July 18) it has been reprinted three times, and that a second edition is now published. We agree with Surgeon Rear-Admiral Wakeley's remark in his Foreword that it is the most up-to-date and practical handbook of its kind. The new edition includes a description of crush injury syndrome and the use of soft paraffin for minor burns on hand or face. The section on blast effect has been re-written to conform with the results of recent research and particulars are also given of the rocking method of Artificial respiration. Other valuable pieces of information have been added and Mr. Charles W. Hipkins, Lay Instructor in First aid to the Great Western Railway, again contributes two chapters on the transport of the sick and injured.

The Scrap Heap

A Southern Railway house flag, found at Cherbourg by a flying officer from Portsmouth, has been returned to Waterloo. He discovered the flag in a corner of the Maritime Buildings.

* * *

The Merchant Navy Comforts Service has received a donation of £85 sent by Mr. R. H. Spackman, Honorary Secretary of the Cricket Section of the Southern Railway Athletic Club, Ruden Way, Epsom Downs. This sum represents the proceeds of a cricket match, as well as donations and collections, the whole of which will go towards providing necessities and comforts for some of the gallant men of the Merchant Navy.

* * *

The largest award yet paid by the Pullman Company to one of its employees under its suggestion scheme has gone to John H. Prince, Assistant Storekeeper at the company's shops at Calumet, Illinois. Hitherto worn gear units used to drive generators and air-conditioning equipment on lightweight Pullman sleepers and lounge cars, have been returned to the manufacturers for overhaul. Prince suggested that this work should be done in the company's own shops; as a result, the Pullman Company, after spending $17,951 on new tools, saved $23,228 in the first year of the new arrangement. The award paid for the suggestion was $2,275.

* * *

International Monetary Fund Quotas

The distribution of quotas agreed for the International Monetary Fund, which it is hoped will help to stabilise exchanges and promote world trade after the war, has resulted in an aggregate contribution by the subscribing powers of $8,800,000,000. *The Economist* gives the following distribution of this total:—

(In $ millions)

U.S.A.	2,750	Greece	40
U.K.	1,300	Iran	25
U.S.S.R.	1,200	Peru	25
China	550	Philippines	15
France	450	Venezuela	15
India	400	Uruguay	15
Canada	300	Bolivia	10
Netherlands	275	Luxembourg	10
Belgium	225	Iraq	8
Australia	200	Ethiopia	6
Brazil	150	Costa Rica	5
Czechoslovakia	125	Dominica	5
Poland	125	Ecuador	5
South Africa	100	Guatemala	5
Mexico	90	Haiti	5
Jugoslavia	60	Salvador	2½
New Zealand	50	Honduras	2½
Norway	50	Nicaragua	2
Chile	50	Paraguay	2
Colombia	50	Iceland	1
Cuba	50	Panama	½
Egypt	45	Liberia	½

Mixing His Drinks

Traveller (in station refreshment room): "Excuse me, miss, but this cup of coffee has a distinct taste of cocoa!"

Waitress (sweetly): "I'm sorry sir, I must have given you tea."—*From "Laughs Along the Lines."*

* * *

Penicillin Thrown from Train

Penicillin was thrown from the express train, "Spirit of Progress," to save the life of an 11-year-old girl dying of meningitis in Heathcote Convent, says Reuter from Melbourne. The Victorian Railway Commissioners arranged for the train to slow down at Kilmore, nearest point to Heathcote so that the penicillin, in a special packet, could be thrown out.

* * *

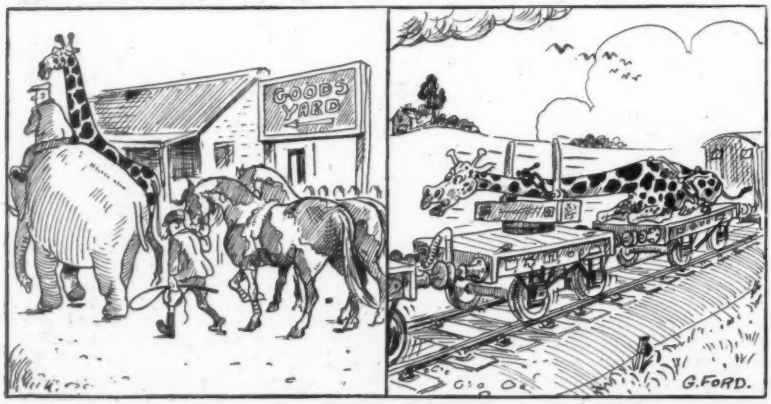
Exchange Is No Robbery

In the fifth year of war the freedom with which British railways are using one another's rolling stock is having some remarkable results. On August 23, for example, the leading coach of the 9.30 a.m. train from Bristol (Temple Meads) to Paddington was an L.M.S.R. 12-wheel composite corridor brake of Caledonian Railway origin, built nearly forty years earlier as part of the "Grampian Corridor" formations for service between Glasgow, Edinburgh, Perth and Aberdeen. The rear end of the same G.W.R. train was brought up by two corridor coaches of modern L.N.E.R. stock. In the same week the 2.30 p.m. relief express from Exeter to Manchester, except for two L.M.S.R. coaches at the front end, was a complete train of Southern Railway corridor stock.

* * *

The Sealed Wagon

An acquaintance of mine, recently returned from a holiday in South Donegal, has brought back the story of an unusual experience on the narrow-gauge line linking Stranorlar and Strabane. It concerns a sealed wagon passing from one station in Eire to another, and using part of a Northern Ireland railway system. Eire Customs officials, who had selected Castlefin as the point for examining all outward-bound traffic, spent longer than usual over their job, which becomes more arduous as Eire's supply position worsens. Eventually the examination ended, and the train started on its way, but at the next stop—the last before entering Northern Ireland territory—there was a long delay. Someone had discovered that the sealed wagon was unsealed, and a Customs officer had to make the journey from Castlefin to Clady by taxicab in order to complete this formality.—*The Roamer in "The Belfast News Letter."*



Owner's risk

YES, MA'AM! The scene is a post-war diner. The time? We hope it's tomorrow. And there you are, taking that delightful trip you planned for "after the war!"

At ROCK ISLAND, the post-war pattern is laid. Breath-taking beauty will grace the interiors of a greatly enlarged and finer fleet of Rockets. Travel costs will be low... schedules stepped up. Luxury travel will be "standard" on the railroads tomorrow.

It's a dream, yes. But dreams like this made America great. A forward-looking organization, which offers today's amazing Rockets as proof that dreams can be worth while, predicts standards of travel higher than the world has ever known.

ROCK ISLAND will always go on and on, giving you the newest, the finest in transportation.

TOMORROW.. Even Finer Transportation

ROCK ISLAND LINES

ONE OF AMERICA'S RAILROADS—ALL UNITED FOR VICTORY

An interesting "prestige" advertisement issued by the Rock Island system, U.S.A.

* * *

New Controller of Matches

The President of the Board of Trade has appointed Sir Gerald Canny, K.C.B., K.B.E., to be Matches Controller in succession to Sir Sydney Chapman, K.C.B., C.B.E.

* * *

Holiday Travel

I travelled recently in the guard's van of a crowded holiday train from Liverpool to Manchester. Our "mixed grill" in the van included twenty-four cartons of pork sausage, eighteen perambulators, four baskets of live pigeons and Police Constable No. 47.

As Guard John Robinson consulted his railway "turnip-watch" at each station, we fell to discussing British trains and their time-keeping. I discovered that although the engine driver is responsible for running his train to time, the railway company does not supply him with a watch. Yet the income-tax authorities give the engine driver a yearly tax rebate allowance for repairs to his watch as an essential tool.—*From "The Daily Sketch."*

* * *

The Railroad Signal

Oh, sentinel, lone guardian of the way,
Faithful through winter storm and summer sun,
Your "watch" extends through night as well as day;
'Tis well for us your task is so well done.
We do not see you as we hurry past,
Speeding along in comfort, safe and warm,
Yet there you stand, alone upon your mast,
Saying "Proceed! I'll keep you safe from harm!"
Your "Halt!" must absolutely be obeyed,
It matters not how safe the tracks appear,
Or how we fret and fuss if we're delayed,
We needs must wait until you signal "Clear."
If, by mischance, we pass your crimson eye,
Disaster follows, death's the penalty.

SIDNEY WITHINGTON

OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

RHODESIA

Railways and Taxation

In the course of his 1944-45 budget speech before Parliament the Minister of Finance, Southern Rhodesia, said that the Government was asking the House to vote a refund to the railways of the amount paid by them as excess profits tax last year amounting to £170,386; and that it would be introducing a Bill to restore to the railways the exemption from excess profits tax which they had enjoyed until last year. To obtain a full appreciation of the matter he would take honourable members back to the Railways Amendment Act of 1941. It would be recalled that that Act removed the ceiling of the rates stabilisation account and provided that any excess of realised income over the standard revenue not required for the reserve account should be carried to the rates stabilisation account. In effect, therefore, the excess profits were made available for the benefit of the users of the railways.

Northern Rhodesian Legislation

Later on, the Minister said, the Government had discovered that Northern Rhodesian legislation had not exempted the railways from excess profits tax, which meant that to that extent the rates stabilisation account, which was for the benefit of all the participating territories, would have been mulcted. The Government, therefore, by the amending Excess Profits Tax Act last year required the railways to pay excess profits tax on their income derived from that territory. It had now been found that Northern Rhodesia was not collecting excess profits tax from the railways and, consequently, were it not for Southern Rhodesian legislation the whole of the excess profits would accrue to the rates stabilisation account. The Government proposed, therefore, to retract from the decision taken last year; to refund the tax already paid; and to introduce legislation to provide that no excess profits tax should be paid by the railways except when they were liable to pay the tax in the United Kingdom, Northern Rhodesia and Bechuanaland.

SOUTH AFRICA

Encouragement for Overseas Firms

Replying to questions at the Cape Provincial Congress of the United Party, the Minister of Economic Development said that the Government already had taken steps to encourage overseas manufacturing firms to set up factories in the Union. He was not giving away any secret when he said that, within the past few months, five large overseas firms had sent representatives to the Union with plans for establishing themselves there after the war. The Minister added that the United Nations were calling for more services from the Union, especially in respect of coal production and ship repairs, but that at the moment South Africa could not meet all the demands.

Transport Equipment from U.S.A.

Mr. R. E. FitzGibbon, a member of the National Road Transport Council, who recently returned from a mission to Great Britain and the U.S.A., stated in an interview that he was convinced that the Council's estimate that transport equipment in the Union must last until 1947 was optimistic. His account of the Union's industrial war production had so impressed the American authorities that they had increased their allocation; that did not mean immediate relief, but meant that the U.S.A. was prepared to help where it could. The Americans also had been impressed by the Union Government's efforts to conserve transport.

UNITED STATES

A Good Financial Record

The Minneapolis & St. Louis Railway Company has achieved the record of being the only Class I railway in the United States with no remaining mortgage on its property; the last outstanding bond issue, of a little more than one million dollars, was redeemed on May 1. The feat is the more remarkable in that for many years the line was bankrupt. Since 1934 an indebtedness of nearly $2,500,000 has been paid off, and over $7,000,000 has been spent in a continuous programme for the improvement of equipment and facilities, including the provision of a number of diesel-electric shunting locomotives, and a diesel-electric freight locomotive for long-distance service, the first of three now in course of construction. Delivery is expected in the autumn of 500 bogie box wagons, in time for the movement of the grain crop. Credit for the energy which has had such admirable results, is largely due to the President of the company, Mr. L. C. Sprague, who was receiver until the line emerged from receivership in 1943 (see also *The Railway Gazette* of March 1 last).

Neglect of Rules

Non-observance of rules is blamed in a report of the Interstate Commerce Commission for having caused a collision on the Southern Railway system at Sideburn, on the double-track main line between Orange and Alexandria, Virginia, on March 2, which resulted in the deaths of five employees. The trains concerned, however, were two freight trains of the Chesapeake & Ohio Railway, exercising running powers over the section concerned. The leading train had been stopped at an automatic block signal, and, after having restarted, had attained 4 m.p.h. when it was run into by the second train. The latter had been checked at the previous signal, but had continued under "stop-and-proceed" rules. The accident is reported to have occurred because no flag protection had been provided by the staff of the leading train, and because of excessive speed, in conditions of restricted visibility, by the following train; the report stated that such careless running had been prevalent over the section concerned.

Relocation and Bridge Replacement Contracts

Four contracts have been placed by the Chicago, Rock Island & Pacific Railway in connection with the relocation for 23 miles of its main line from Chicago to the west, between Eldon and Perlee, Iowa, which is to cost in all $2,450,000. The change is designed to reduce gradients and curvature, and thus to permit acceleration of passenger and freight traffic. It is expected to complete the work before the end of the year.

A costly bridge scheme is to be carried out by the Pere Marquette Railway, which has let two contracts for the replacement of the bridge which carries its main line across the Saginaw River at Saginaw, Michigan. The centre-line of the new bridge is to be 37 ft. north of the present structure. The two contracts amount to $884,000, and, in addition, extensive track and signalling changes will be carried out by the company's own forces. The same company is spending $150,000 on an extension of the steel-sheet piling revetment wall at St. Joseph, Michigan.

In connection with new coal-mining areas in course of development, the Illinois Central System is seeking authority from the Interstate Commerce Commission to construct a branch extending 4½ miles to the east from a point near Greenville, Kentucky. The I.C.C. has refused a similar application from the Chesapeake & Ohio to continue its proposed Homing Creek branch, in Greenbrier County, West Virginia, a further 2¾ miles.

GERMANY

Light Railways

There are at present in Germany 445 privately-owned railways performing public transport service, of which 136 are termed *Privateisenbahnen* (or private railways proper) and the balance *Kleinbahnen* (light railways). The total route-length of "private" railways was 4,824 km. (2,990 miles) at the end of 1943, and that of light railways, 10,149 km. (6,290 miles). In addition, there are about one hundred privately-owned railways not open to public traffic although operating regular services.

Some 61,000,000 *tonnes* were conveyed by the light railways in 1943, and the number of passengers carried was 191,000,000; these totals were 117 per cent. and 165 per cent., respectively, greater than those for 1933. About 95 per cent. of the route-length of the light railways is laid on their own formations; only 5 per cent. of the permanent way makes use of public roads. Maintenance and renewal costs are low. The route-length of light railways in proportion to that of all railways is highest in the eastern provinces.

Gauge and Track

Nearly 50 per cent. of the route-length of light railways (about 3,100 miles) represents narrow-gauge track; about half of this total is on the 750 mm., and about 400 miles are on the 600 mm. gauge. The differences of gauge represent a serious handicap at present; it is stated, however, that preliminary steps towards unification are being considered. Double track is found on less than 1 per cent. of the total route-mileage of the light railways. About 5 per cent. of the total route-length is electrified.

Financial Position

Local traffic, not extending beyond the region served by any particular light railway, accounts for 57 per cent. of the combined passenger traffic of the light railways and for 28 per cent. of their combined goods traffic. The proportion of passenger receipts (RM. 41,000,000) to the total receipts of the light railways amounted to 34 per cent. in 1943. Despite their higher rates and fares, it is stated, neither the light railways nor the private railways work as profitably as the Reichsbahn, because they lack the density of traffic (their tariffs show considerable diversity). On the other hand, both light and private railways are able to spend less on salaries and wages, and on construction. The combined capital invested in the light railways amounts to RM. 578,000,000, and their combined share capital is R.M. 223,000,000.

Modern British Track Development

*A brief survey of recent innovations in permanent way maintenance and design**

TO the average layman, there has been slight visible change in the standard permanent way of British main lines for many years, and in fact the existing standard permanent way has been little altered in essentials for about 20 years. During that period the demands made by the traffic on the track have increased enormously, and, if the latter had actually altered but little, the Engineers' Department would be open to one of two criticisms, namely, either that the track was unnecessarily strong at the date of its adoption, or it has an inadequate factor of safety today. In point of fact, there have been many improvements in the design and maintenance of the track in recent years, so that neither of these criticisms is valid.

The outstanding feature of railway operation in recent years has been the great increase in speeds, both passenger and freight. This has not been accompanied by a corresponding falling off in train loads, so that, to operate at the higher speeds, larger locomotives have been necessary, especially as the practice of double heading heavy trains has decreased to a remarkable degree. Even after all allowance is made for the improvements in design of the new and more powerful locomotives made by the Chief Mechanical Engineers, the demands on the track at the outbreak of war were higher than ever, and during the war period, though ultra-high-speed trains have been withdrawn, there has been a great increase in traffic; thus demands on the permanent way remain at a high level.

Transition Curves for High Speed

British railways for many years have been improving the alignment of their track, particularly by the provision of transition curves. Because of the age of the systems, this had to be done on existing lines not originally provided with transitions. Their provision did away with shocks at the entering and leaving of curves, giving more pleasant running and less abuse to the track and rolling stock. In the early and middle thirties, when ultra-high-speed trains were first placed in service, it was found that many transitions quite suitable for 60 m.p.h. were uncomfortable and difficult to keep in line with traffic running at 80 or 90 m.p.h. In consequence, a considerable amount of re-alignment, amounting in the aggregate to hundreds of miles, had to be undertaken. When this was done, the ultra-high-speed trains ran as comfortably and sweetly as their predecessors, and little additional maintenance was required to cater for them. The marking of curves with permanent monuments, usually bearing the superelevation required opposite each, enabled the maintenance staff to maintain the road to a much improved standard.

The running of ultra-high-speed trains rendered it more important than ever to eliminate all service slacks. Frequent causes of these were junctions and point-and-crossing work at large stations situated on curves where, with the standard permanent way, it was impossible to carry adequate superelevation through the leads. The small amount possible was obtained by adzing the timbers, a rather makeshift operation, and one which weakened the supporting timber at a point where full strength was desirable. A great improvement was attained by the introduction of two-level chairs (see *The Railway Gazette*, October 2 and 9, 1936). These chairs have a progressively increasing thickness of base above the normal standard and thus enable superelevation to be provided on timbers laid horizontally. The chairs increase the thickness of the rail seat progressively to a maximum of 1½ in., which is attained in either 12 or 16 steps, and, by the use of proper switches and crossings, a transition curve effect can be obtained. By using two-level chairs on the straight road as well as on the turnout, and canting the timbers, 3 in. of superelevation can be attained. This has very largely solved the junction problem and has enabled engineers to ease speed restrictions to a remarkable degree.

High-speed operation called for refinements in "top" as well as in "line" of the road. "Top," of course, is a matter of packing of the sleepers, and practice varied from shovel packing on the L.M.S.R., inherited from the old L.N.W.R., to beater packing on the G.W.R. In high-speed operation, severe hammer blows are given to the sleepers. This leads to hanging sleepers which are difficult to detect, but which it is important should be noted and made good as soon as possible, as otherwise the defects in the track would be spread rapidly by locomotives lurching and rolling at high speed. To meet this problem, measured shovel packing was tried and adopted. This method originated in France but has been considerably adapted to meet British practice. It is standard practice on the L.M.S.R. and is used to a greater or less extent on the other lines. Visible variations in rail top are detected and measured by means of sighting boards, and hanging sleepers by voidmeters, and by the provision of scales on the boards and voidmeters the method indicates the quantity of ballast chippings required to bring each sleeper to correct level.

Mechanical Tamping

To reduce the time spent in packing sleepers, particularly after relaying, before the road has come to a full bearing, use is made of mechanical tamping. On the S.R., under intensive services of high-speed multiple electric trains, Mr. Ellson, the late Chief Engineer, found that mechanical tamping gave better results than hand tamping, and similar plant is in use on other lines, using either pneumatic tools similar to those in general use in America, or self-contained units of the petrol-driven type. The aim is to give the road a small lift and tamping from a face, resulting in its requiring much less attention for, say, a year or eighteen months than under present conditions. It is probable that the use of mechanical tamping plant will entail a deeper bed of ballast than that now provided on many miles of line, but, if the road stands up to traffic longer without intermediate attention, additional ballast would be an economy, even though its provision would be difficult because of overbridges with restricted headroom and other structures with limiting dimensions. In America and Germany, where power tamping is standard practice, much deeper beds of ballast than in this country are standard, but their provision was much easier in these countries in view of the relative infrequency of overbridges compared to Great Britain.

Research will continue into methods of which the adoption will reduce the quantum of day-to-day maintenance. Track under heavy and fast traffic requires an adequate bed of ballast in good condition, free from weeds, silt, and clay, in order that water will drain away rapidly and not soften the formation so as to cause pumping sleepers. Ballast becomes foul through use and traffic, and requires to be cleaned, and so far this has been an awkward and laborious job. Attempts have been made to develop power-driven screens for screening the dirty ballast, but none of these has been very successful. On the L.N.E.R., a plough has been used to turn out the ballast slope beyond the sleeper ends on the cess side; the ballast is thrown back by forks. In a number of cases, it is usual to throw out dirty ballast with shovels and throw back with forks, thus giving a considerable degree of cleaning. In America, mechanisation of ballast cleaning has proceeded much further than in this country, but opportunities for using the American machinery appear to be lacking, because of the much greater density of traffic here. The screening plant, which proceeds at the rate of 3 m.p.h., and requires complete possession of the line, would not be looked on with favour by the operating authorities in this country. A most ingenious machine, the MacWilliams Mole, is used for cleaning out the ballast between tracks and the offsets, but could not be used here as the space between the sleeper ends between tracks is too narrow. Undoubtedly there is need for mechanisation of ballast cleaning, as hand operation is laborious and expensive.

Weed Killing

Vegetation very soon diminishes the permeability of ballast and, therefore, it is important to minimise weed growth. At one time this was effected entirely by hand, either picking the weeds out of the stone ballast, or, in the case of ash or gravel ballast, hoeing or raking, or both. In recent years, however, chemical weed killing has been developed very largely, and, until the advent of wartime restrictions on the supply of chemicals, most of the lines had an annual programme covering a large mileage, chiefly of secondary and tertiary lines where the manpower was less and the fertility of the ballast frequently greater. It is probable that after-the-war economies will lead to an extension of chemical weed killing which can be carried out by night with proper lighting, once the blackout restrictions are withdrawn. American practice in weed burning is not suitable in this country owing to our more moist climate; in addition, fuel for weed burners is more costly here.

Sleepers and Timber Shortage

For many years the British railways used Baltic redwood for sleeper timber, and creosoted it in this country. Improvements were made by adzing the sleepers by machinery to give a flat base, and boring all fastening holes before creosoting. Economic and political changes have diminished the supply of Baltic redwood, and use has been made of Douglas fir from British Columbia. This is a more difficult wood to creosote

* Abstract of a paper prepared for the Diamond Jubilee of the Permanent Way Institution, by Mr. W. K. Wallace, Chairman, R.E.C. Engineering Committee, and Chief Civil Engineer, L.M.S.R.

than Baltic redwood, and at first British plants were not successful in treating it, and there were many failures of sleepers after a comparatively short life. Modern plants provided with incising machines and capable of subjecting the sleepers to higher temperatures and pressures have improved matters considerably, and it is now hoped to obtain an adequate life from Douglas fir sleepers. Western hemlock has also been used to a considerable extent, and the difficulties of creosoting this timber are much less. The increased cost of creosote is leading to experiments in impregnation with chemical salts, and extensive tests are in hand. These salts have shown much better penetration of the somewhat mixed varieties of home-grown timber which the war has brought into use, but it is too early yet to say whether the sleeper life will be satisfactory.

The timber shortage in wartime brought the question of substitute materials to the front, and, as steel (an alternative tested on a large scale in pre-war days) was unobtainable, reinforced concrete has been under intensive study and test. Many miles of sidings have been laid with either concrete through sleepers or blocks, and all the companies have concrete designs under test in main lines. It would appear that some of the designs probably will give satisfactory service, at any rate in secondary lines, or where speeds are not high. Concrete sleepers are heavy and difficult to handle in relaying, but, if they give an adequate life, this defect is not so serious. They appear to be less suitable than timber on track-circuited track.

The Rail Joint Problem

The standard main-line rail in use in this country of the 95-lb. bull head section is of insufficient depth to permit of the design of a strong fishplate, and the joints in the rail have always given trouble. In recent years the short fishplate with two holes, and varying in length from 9 in. to 11½ in., has been used widely, and, as it permits the joint sleepers to be brought much closer together, it would appear to be an improvement. The reconditioned fishplate, with its increased depth between fishing tables and cambered top table, improves the support of worn rails at the ends, with consequent increase in life of rail, and improved running. The joint problem has been particularly acute on the S.R. under intensive high-speed electric traffic, and a most interesting supported joint, designed by the late Chief Engineer, Mr. Ellson, is in use. The L.P.T.B. has a considerable mileage laid with Brogden joints, a scarfed type made by machining the ends of the rails, which gives quieter running so essential for the board's purposes in the tube tunnels. Tests of this joint on main lines have not been so successful, but are still in progress.

Another line of attack on the joint problem is an attempt at their partial elimination by purchasing rails of longer than the standard 60-ft., or welding rails into long lengths. Rails rolled 90 ft. and 120 ft. long have been tried, and an extension of their use would appear to depend largely on their price. Welding is under trial on all lines, and probably the most outstanding are the 300-ft. rails welded by the L.P.T.B. The original tests were of various types of thermit weld, but flash-butt welding has given better results under the Tup test and a considerable mileage of rails thus welded is now in use; some are of two or three 60-ft. rails joined, others of 39-ft. rails. It would appear probable that an extension of this practice after the war is likely, and schemes for the installation of welding plants are under consideration. The welded rails already in use have proved reliable in service and their use in tunnels and on water troughs, for example, will lead to economies in maintenance as well as improvement in the quality of the running.

It is, of course, impossible to provide adequate expansion spaces for free thermal expansion of long rails, so that their installation leads to compressive stresses in hot weather and tensile in cold, but tests already made have shown that rails up to 2,000 ft. long have not buckled, so that the danger of the track going out of line in hot weather does not appear to be serious. Considerable mileages of rails have been welded into long lengths in America, but the flat-bottom rails used in that country have greater lateral stiffness than the British bull head, thus giving the track greater stability. Another use of welding on an ever increasing scale, which is playing an important part in the maintenance of the track, is the reconditioning of switches and crossings *in situ* and in depots. The frequent resurfacing of switches and crossings not only maintains continuity of rail surface, with greater comfort of travel, and reduced maintenance costs of track and rolling stock, but in addition this resurfacing of worn units synchronises their lift with that of the other components in a junction which are less subject to heavy wear, thus enabling a complete renewal of the junction to be effected, rather than piecemeal renewals. The economies arising from this practice come from the less frequent renewals of switches and crossings, and from other directions difficult to assess, namely, the reduced interruption and diversion of traffic.

The rail life has been considerably lengthened by the extended use of lubricators on curved track, and their more recent introduction in switch and crossing work to prolong the life of these units appears to be justified.

The introduction of steel keys, the grip of which is uninfluenced by temperature variations, lessens to a considerable extent the attention necessary in day-to-day maintenance in keeping the rails well keyed up. Furthermore, by extending the use of steel keys on branch lines, patrolling has been reduced, and time previously spent on redriving keys has been put to other maintenance duties.

Flat-Bottom Track

It was noticed that track on American lines had stood up to traffic with minimum maintenance through the severe financial depression during the middle 'thirties in the U.S.A. and it was considered that a test should be made in this country of American flat-bottom track to see if it required less maintenance than the standard bull head. The first tests were made on the L.M.S.R. in 1936, and were followed by an additional mileage laid in 1939. The L.N.E.R. already has a considerable mileage, together with point-and-crossing work. Opportunity was taken of testing the 110-lb. British standard section and the 131-lb. A.R.E.A. section, both of which have the same width of bottom flange. Baseplates provided between the rail and sleeper are of several designs, some of rolled steel, others of cast iron. Fastenings ranged from bolts and screws, somewhat similar to the standard permanent way in Germany, to a mushroom-headed screw and elastic spikes. The latter is really a curved leaf spring and secures both rail and baseplate to the sleeper. So far it has given satisfaction. Flat-bottom road generally has proved satisfactory and requires less maintenance than bull head. It is probable that its use will increase after the war.

The rise in the cost of labour will lead to changes in practice to prevent a rise in the cost of the maintenance of permanent way. In fact, many of the foregoing changes in practice have been introduced with the object of reducing unit costs. Increased mechanisation will lead to specialisation on the part of the operators of the machines, and it is quite possible that in the post-war years we shall see more work done by specialist mechanised gangs, leaving to the length gang patrolling duties and the correction of minor defects. In this connection, a start was made before the war with the use of machines for tightening fishbolts and chair screws; the use of travelling cranes on ballast wagon floors for lifting recovered sleepers from line side after relaying; the increased use of cranes for relaying, particularly of point-and-crossing work; the pre-assembly of point-and-crossing work and junctions in which, with a view to increased speed in installation and decreased occupation of the line when relaying, the whole of the leads and chairs are set out and the timbers bored and templates made in the yard, subsequently dismantled, and taken to the site.

In addition to dealing with new material, second hand and serviceable material from relaying is being dealt with to an increasing extent in modernised depots where the rails are handled by magnet cranes, switches and crossing renewed by welding or by welding of Vs, and wing rails renewed with others made from serviceable rail of the correct depth. All this is undertaken with a view to economy in railway maintenance.

After the war the railways will face increased competition from air, road, and coastal shipping, and every effort must be made to give the best possible service to the community, both in passenger and goods, so as to obtain a fair share of the national commerce. There is little doubt that speeds will increase, and the demands on the track be more severe, but if all concerned with its installation and maintenance do their best and pool their ideas, there is little doubt that the engineers' departments of the railways will do their part in maintaining the railways as the backbone of national transport.

ROLLING STOCK REPAIR IN CHILE.—The railway repair shops at Concepcion, Chile, serve the Chilean State Railways from Talca southward to Puerto Montt. During the year 1943 these shops repaired 45 passenger carriages, 455 goods wagons, and 73 locomotives. In August, 1943, they began the construction of 10 third-class passenger carriages, but the wheels and axles are being imported.

TWO THOUSAND TONS A DAY.—Paper is now being consumed, much of it irrecoverably, at the rate of 2,000 tons a day. The present rate of the Allied advance on the Continent cannot be allowed to slacken through lack of essential supplies produced, directly or indirectly, from that commodity. The need for paper salvage was never more urgent; and the systematic economy in the use of, and collection of waste paper, which have become features of wartime, will be necessary after victory in Europe has been achieved.

XUM

Progressive Boiler Repairs at the Gorton Works of the L.N.E.R.

A system introduced for speeding up maintenance work

A PROCESS of repairs to locomotive boilers has been brought into operation at the Gorton Works of the L.N.E.R. which, although making use of features already existing, combines these in one progressive system, designed to deal expeditiously with repairs consisting of the renewal of stay bolts, copper tube and door plates and other repairs of a minor kind, but excluding the heaviest type of repair such as the complete renewal of a firebox, new casings and new smokebox tube-plates.

The scheme embodies the use of gantry structures for containing the boilers during the operations of stay drilling, tapping and stay running-in, which operations are carried out by the use of portable electric machines of the high-frequency type; power is obtained at 200 cycles per sec. from two 25-kVA. rotary converter sets and yielding an armature speed of some 1,200 r.p.m., which is geared down at the tool point to speeds varying between 185 and 500 r.p.m. according to requirements; a high power-weight ratio is thus obtained.

The various repair stages in the scheme are arranged in line to form a progressive process as indicated in the accompanying diagram and boilers are inverted during the process so as to give maximum accessibility during repairs.

In accordance with this scheme all boilers removed from engines on arrival at the works for general repair are stripped of tubes and elements preparatory to examination of the remaining parts. Those boilers not being found to require the heavier class of repairs outlined above are then brought into line for the following series of operations:

1. Centring heads of staybolts requiring renewal. Removal of rivets if necessary for plate replacements.
2. Drilling ends of staybolts.
3. Breaking down and shelling out staybolts. Replacement of plates where necessary.
4. Tapping staybolt holes.
5. Fitting new staybolts.
6. Riveting new staybolts and completion of replating work.

For convenience and economy of transport the special repair equipment is located in one bay adjoining the engine-erecting shop, in which, on two adjoining pit roads there have been erected two similar sets of steel gantries, three on each road, for providing access to boilers placed within them; the arrangement is shown on the diagram.

The drilling gantries are designed to carry the drilling tackle, telescopic balancers for the portable high-frequency drilling machines, back supports for the latter and electric-light fittings. The other gantries in each set carry the machines for tapping and stay running-in.

Other equipment includes special trollies for conveying the boilers from stage to stage; power winches placed in the pits for moving the boiler and trollies from stage to stage; a low-pressure water system for supplying water as cutting lubricant for the tools; and compressed air from the shop supply lines for feeding the drills when cutting, through the medium of a small air cylinder attached to the back of each machine and having a plunger with a centre at its outer end for engaging with one of the thrust bars attached to the gantry, thus giving a maximum constant feed pressure under all conditions.

The sequence of repair operations on either side of the two pits ("Belts A and B") is as follows:—

Operation 1

Before entry into the drilling gantry the heads of the staybolts requiring renewal are centred, and rivets requiring replacement are removed. The former operation is carried out by a pneumatic punch and the latter by flame cutting.

Operation 2

The boiler is then lifted at, say, point 1(*a*) by an overhead travelling crane which spans the entire bay, and placed with foundation ring uppermost onto a trolly, which is then drawn beneath the drilling gantry at 2(*a*) by the winch situated at X(*a*)

All the staybolts requiring replacement are then drilled beneath the gantry with the boiler in the one position only; the gantry is designed to permit of the drilling tools being used with the minimum effort at all points on the inner and outer firebox wrapper places, back plates and throat plates of all types of boilers. The most suitable spindle speed for the drilling machines is 500 r.p.m.

Operation 3

The staybolts having been drilled at both ends, the boiler still inverted on its trolly, is drawn forward to point 3(*a*) where the drilled staybolts are broken down and shelled out by pneumatic hammers. At this stage new plates are fitted if required, in which case it is necessary to transfer the boiler temporarily to point 3(*c*) on the outer pit so that repairs to the boiler immediately following shall not be held up awaiting vacant space at 3(*a*). When replating has been completed, the boiler is returned to its original position on the belt in readiness for the next operation. When no new plates are required the boiler is not removed from the belt.

Operation 4

The boiler is next moved on its trolly to point 4(*a*) beneath the tapping gantry, by means of the winch Y(*a*). The tapping gantry details consist essentially of a runway system at the top on which the balancers are suspended, which in turn support the portable tapping machines as in the drilling gantry. The tapping machines operate on the same principle as the drilling tools but are reversible operating at 185 r.p.m., which speed is maintained under load; although this speed is much higher than the speed of rotary air-tools previously used, the tap breakage has shown a marked reduction, principally because of the great care in the correct balancing of the tool.

Operation 5

When the tapping has been completed, the boiler is moved forward again to point 5(*a*) beneath the stay-fitting gantry, which is similar to the tapping gantry and, with the boiler in this position, the new staybolts are run in with machines and balancers similar to those used for

(*Continued on page* 245)

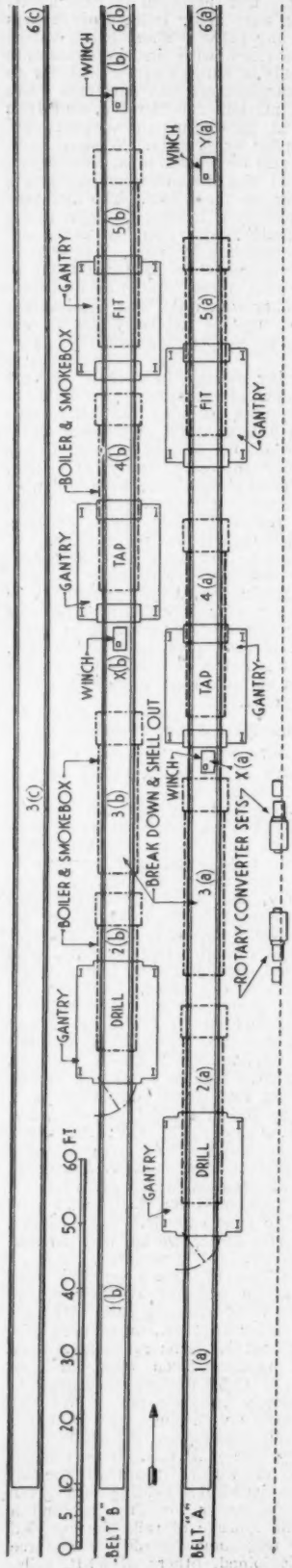
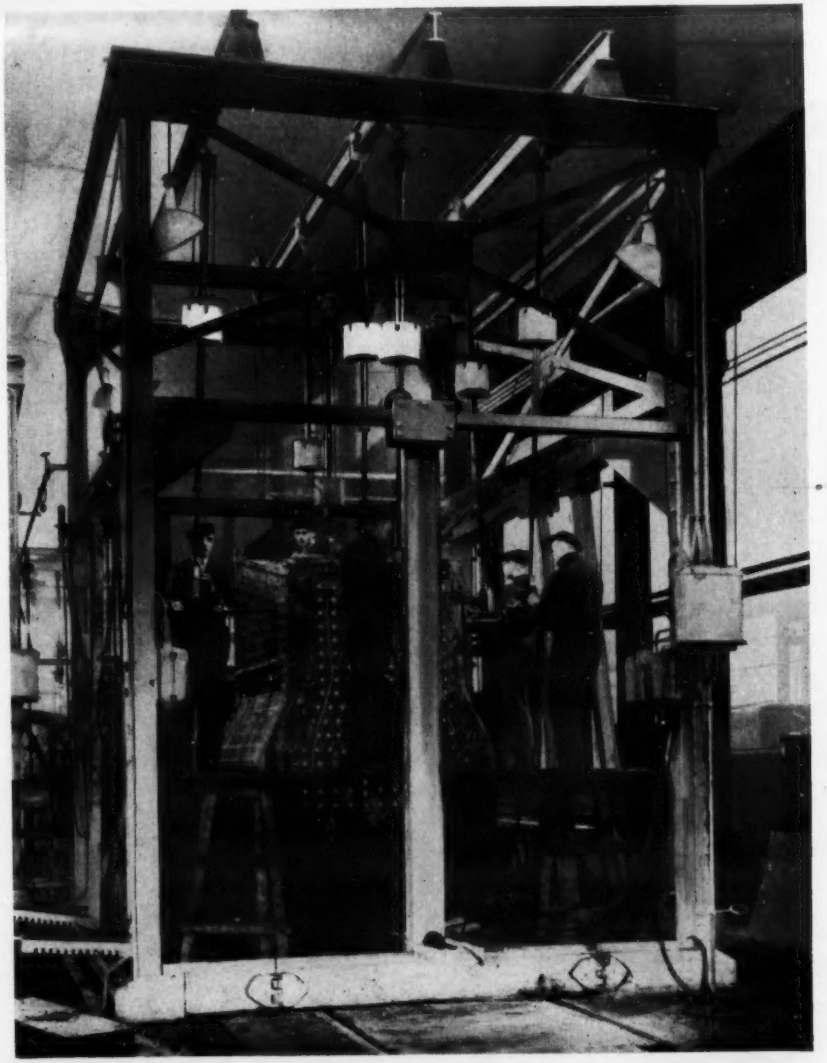


Diagram showing the general arrangements for boiler repairs at the L.N.E.R. Gorton Works

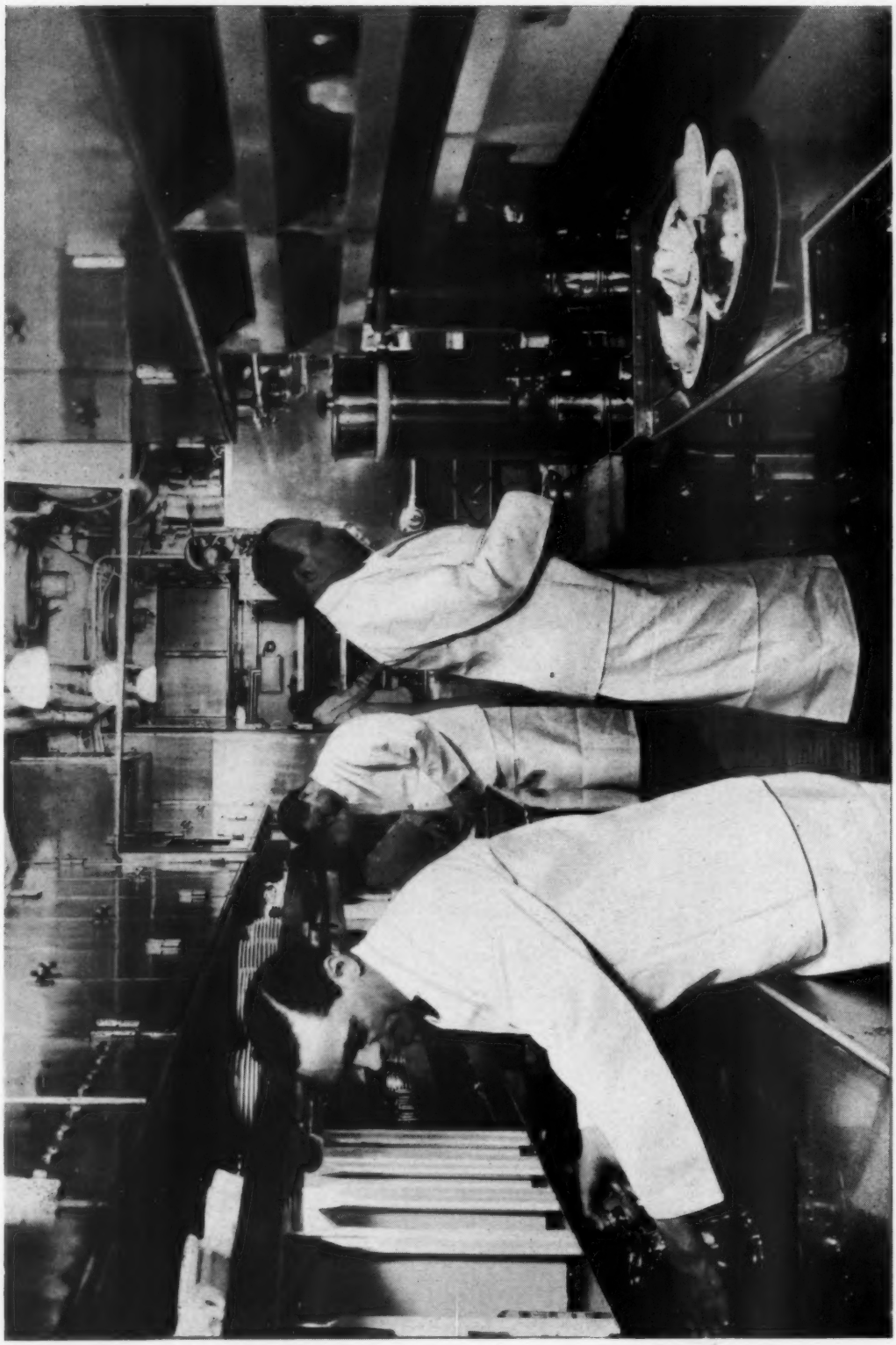
Diagram showing the general arrangements for boiler repairs at the L.N.E.R. Gorton Works



A drilling gantry in use at Gorton Works

Gantries carrying machines for tapping and stay running in

PROGRESSIVE BOILER REPAIRS AT GORTON WORKS, L.N.E.R. (*See opposite page*)



The interior of the kitchen car on the joint Chicago & North Western and Union Pacific streamliner "City of Los Angeles." This train runs twice weekly in each direction between Chicago and Los Angeles; the time allowed for the 2,299 miles is 39¾ hr. on the peacetime schedule, eased to 41¾ hr. during the war emergency. Passengers making the through journey spend two nights and the intervening day in the train

RAILWAY NEWS SECTION

PERSONAL

Sir Leonard Wilson, Chief Commissioner of Railways, India, proceeds on leave this month preparatory to retirement. He is to visit the U.S.A. to procure equipment for Indian railways. Sir Arthur Griffin, O.B.E., General Manager of the North Western Railway, will succeed him as Chief Commissioner of Railways.

Mr. T. J. D. Atkinson, K.C., O.B.E., has retired from the office of Registrar to the Railway Rates Tribunal, owing to ill health, after nearly twenty-three years' service.

We regret to record the death on August 25 of Mr. Robert Ferguson Smyth, who was Chief Engineer for Ways & Works, Siam State Railways, from 1922 to 1927.

Sir Frederick Heaton, Chairman & Managing Director of Thomas Tilling Limited, is joining the board of the Cornhill Insurance Co. Ltd. He has relinquished his position as a Director of the Alliance Assurance Co. Ltd. (See also page 246).

Mr. Frederick G. Gurley, Executive Vice-President of the Atchison, Topeka & Santa Fe Railway System, U.S.A., has been elected President & Chairman of the Executive Committee, in succession to Mr. Edward J. Engel, who has retired from that position, but who continues as a member of the executive committee and the board.

Mr. J. E. Fisher, Yardmaster, Whitemoor, L.N.E.R., has been appointed Stationmaster, Norwich (Thorpe), in succession to Mr. E. E. Ainger, who is retiring, from September 16.

We regret to record the death on August 24 of Mr. Archibald Pyper, formerly Stationmaster, Belfast (Queens Quay), Belfast & County Down Railway.

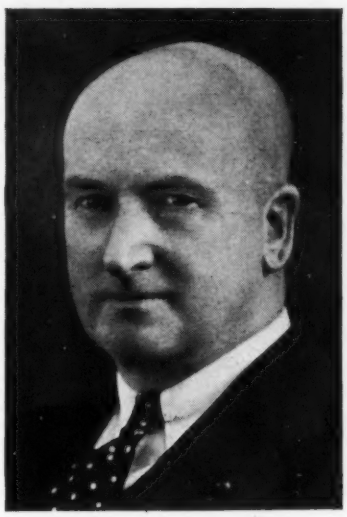
The late Sir Christopher Needham, who was a Director of the London & North Eastern Railway Company and of the Manchester Ship Canal Company, left £366,281.

Mr. R. J. Morris, a Director of Edison Swan Cables Limited, has been elected a Director of the Edison Swan Electric Co. Ltd. Mr. G. A. Cheetham, Managing Director of Ferguson Pailin Limited, has been elected a Director of the Edison Swan Electric Co. Ltd. and of Edison Swan Cables Limited.

The late Mr. H. B. Huddleston, who was Agent of the Burma Railways from 1915 to 1920, and afterwards a Director, left £35,556.

We regret to record the death, at Adelaide, on August 7, of Mr. Frederic Alexander Jamieson, A.M.Inst.C.E., lately Locomotive Superintendent of the Peiping-Liaoning (Peking-Mukden) Railway, Chinese National Railways. He entered the service of the Imperial Chinese Railways in 1898 as Assistant Locomotive Superintendent at Tongshan, and soon afterwards became Locomotive Superintendent there, a position which he held for over forty years. For a considerable period he occupied also the post of Works Superintendent at Tongshan.

Mr. Albert A. Gardiner, Assistant General Passenger Traffic Manager, Canadian National Railways, who, as recorded in our September 1 issue, has been appointed General Passenger Traffic Manager, was born in Somerset, England, in 1886. He was educated for the Indian Civil Service, but instead went to Canada and entered the service of the Grand Trunk Railway, 37 years ago. For five years he worked in Bonaventure Station as a clerk, a stenographer and as Chief Clerk in the District Passenger Agent's Office. To a considerable acquaintance with passenger traffic problems he later added valuable general traffic experience while attached to the Vice-President's staff. As General Passenger Agent, Overseas Traffic, from 1926 to 1930, he exchanged information and ideas with transport personalities from all over the world, and accompanied many European dignitaries on tours of Canada. He was appointed Assistant General Passenger Traffic Manager in 1930. Mr. Gardiner was Secretary of the English-speaking sections of the Montreal civic committees for the Jubilee, the Coronation and the Royal Visit. He met Mr. Churchill and his party at sea and, after having accompanied them to Quebec, stayed there to superintend the railway transport arrangements of the Quebec conference. In addition to being a Knight of St. Gregory and of Polonia Restituta (Poland), Mr. Gardiner has been recognised by the French, and a number of other, Governments.



Mr. A. A. Gardiner

Appointed General Passenger Traffic Manager, Canadian National Railways

Mr. D. F. Landale has been appointed Ministry of War Transport Representative in the Middle East, in succession to Mr. E. H. Murrant, who has asked to be relieved of his appointment on taking up the duties of Chairman of Furness, Withy & Co. Ltd.

Sir Geoffrey Burton, Managing Director, Birmingham Small Arms Co. Ltd., has resigned from the board of that company. Sir Geoffrey Burton is at present engaged in a voluntary capacity as Director-General of Mechanical Equipment in the Ministry of Supply. He has occupied this and similar positions in the Ministry for the last four years. He is also a Director, among other companies, of B.S.A. Tools Limited.

Indian Railway Staff Changes

Mr. T. G. R. Eagan, Divisional Superintendent, Lahore, N.W.R., was granted six months' leave from March 17.

Mr. H. M. R. Morse, lately Officiating Deputy Chief Operating Superintendent, on special duty, N.W.R., has been appointed to officiate as Divisional Superintendent, Lahore.

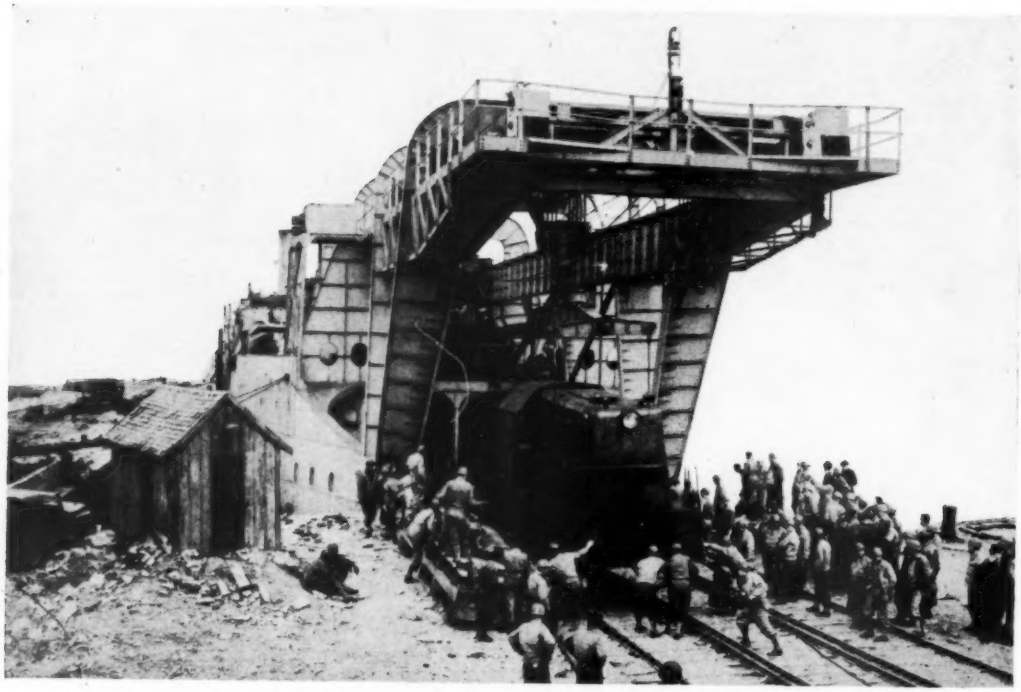
Mr. H. C. W. Westwood, Officer on Special Duty, Railway Board, has been appointed to officiate as Deputy Secretary, Railway Board, as from April 21.

Mr. P. S. Bennett has been confirmed as Signal Engineer, O.T.R.

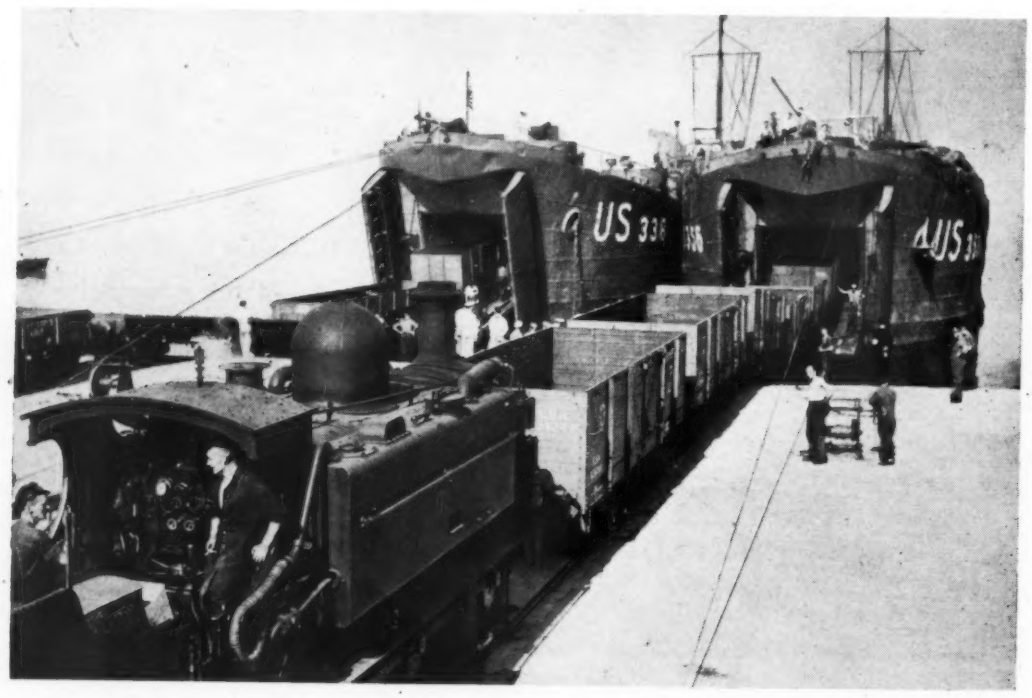
Mr. P. G. B. Reyneke, who has retired from the position of Manager, Publicity & Travel Department, South African Railways & Harbours, and from that of Managing Editor, *South African Railways & Harbours Magazine*, entered the railway service in 1903 as a junior clerk at Johannesburg. He served there for 22 years, and specialised in rates work. In 1925 he was selected to go to London in connection with the British Empire Exhibition; and at the conclusion of his duties he remained at South Africa House to assist in fostering his country's travel interests. Shortly after his return to the Union in 1928 he was appointed Publicity & Travel Agent for the Railways & Harbours Administration at Durban; he proceeded to Cape Town in the same capacity in 1935, but later in that year returned to London as Director of the Publicity & Travel Bureau, in which position he succeeded Mr. G. E. Chittenden, now Assistant General Manager (Commercial), South African Railways & Harbours. During the early months of the present war Mr. Reyneke, having returned to South Africa, took over the Managership of the Publicity & Travel Department and the Managing Editorship of the *South African Railways & Harbours Magazine*.

Mr. J. F. Kuys, Assistant Manager, Publicity & Travel Department, South African Railways & Harbours, who, as recorded in our July 7 issue, has been appointed Manager of that department, entered the railway service in 1920, after having graduated at the University of Cape Town and having served articles of accountancy. In 1922, he became Assistant Private Secretary to the Minister of Railways & Harbours, in which position he succeeded Mr. C. M. Hoffe, the present General Manager. In 1927, he was appointed Assistant to the Union Director of Publicity in New York. He returned to South Africa in 1931, and four years later became Publicity & Travel Agent for the Railways & Harbours Administration at Durban; subsequently, in the same year, he was appointed to the similar position in Cape Town. In 1937 he was transferred to Johannesburg as Chief Clerk, Publicity & Travel Department, and in the next year he was made Assistant Manager (Commercial Advertising & Bookstalls). In 1941 he went to Cape Town as Superintendent (Commercial & Staff), but returned to the Publicity & Travel Department later in the same year as Assistant Manager. Mr. Kuys now has assumed also the position of Managing Editor of the *South African Railways & Harbours Magazine*.

Rolling Stock Ferried to the Cherbourg Peninsula



A 65-ton diesel-electric locomotive being off-loaded from the Southern Railway steamer "Twickenham Ferry" which took the first of such cargoes to the Cherbourg Peninsula



Loading railway rolling stock for France on to train ferries at a southern port in England
(See also opposite page)

TRANSPORT SERVICES AND THE WAR—258

British Railway Invasion Transport

The large-scale movements on British railways in connection with the invasion of Normandy on June 6 were the subject of careful and detailed planning for a lengthy period beforehand, as indeed were all the arrangements for "D" Day. Broadcasting on August 22, General Riddell Webster, the Quartermaster-General, said that the preparatory work had been begun in the early days of 1942, and that the flow of troops, vehicles, and stores had gone on unchecked, and despite unfavourable weather it continued to achieve its target. From the railway viewpoint, zero hour was Sunday, March 26, 1944, on which day the large-scale movements of troops and tanks to the embarkation areas were begun. Some statistical information about the railway share of the work in the four weeks after "D" Day were given in a statement of the Railway Executive Committee, which we published in our July 28 issue, page 93. Now, some further particulars, this time relating to the share of the L.M.S.R., have been issued in that company's staff journal *Carry On*. This shows that the total of O.H.M.S. specials run between March 26 and June 24 reached the enormous figures of 6,841 passenger trains, and 6,888 goods trains, making a grand total of 13,729. Not all of these trains were directly connected with the invasion, but all were Government specials.

With regard to direct invasion traffic on the L.M.S.R., it is stated that from March 26 until the main build-up for Invasion Day was completed the L.M.S.R. ran 244 special trains of tanks and tracked vehicles, with accompanying personnel and luggage, making a total of 395 special trains. Large numbers of these trains ran 500 miles and more on the L.M.S.R. system. The tank specials in particular caused a strain on line capacity because, being in the class of out-of-gauge loads, they could be run only under special arrangements. The other "tools to do the job" began to move on May 10, and from then until June 24 no fewer than 1,232 special stores trains, comprising 47,221 wagons, were run. That makes a total up to June 24 of 1,627 invasion specials. In addition, thousands of wagons of invasion material were worked on ordinary goods train services. Each of these wagons was labelled "Urgent Shipment Traffic" and the men in the marshalling yards took care to see that there was no detention.

While all this was going on, military movements other than those connected directly with the invasion were, as usual, under weigh. During the height of the movements, "D" Day and general military requirements necessitated the following L.M.S.R. specials :—

	Highest week
Special personnel trains	732
Special goods trains	894
Special trains (combined)	1,585
Small parties by ordinary trains ...	1,639 (parties)

Complete Hospital by Rail

A complete U.S.A. field hospital has been sent by the G.W.R. for shipment abroad. The train, composed of 45 vehicles, conveyed 3,299 pieces and weighed 171 tons.

Food for Liberated France

From a station in the Midlands the G.W.R. has sent a special train-load of canned food for the liberated areas in France, comprising 17,412 cases weighing 420 tons, conveyed in 45 vans.

Military Railway Service in Normandy

Supervising the operations of all United States Army Transportation Corps railway units to work on the continent from France, the Second Military Railway Service, commanded by Brigadier-General Clarence L. Burpee, has been active in Normandy since the end of June. The advanced section of the organisation landed first, and after establishing headquarters immediately began reconnaissance. The party moved about in jeeps, including a special rail reconnaissance jeep. Damage to the French rail system caused by bombings of the Allied Air Forces and by the destructiveness of German rearguard actions was found to be quite extensive. Regions that had not been ruined by demolitions and bombings were heavily mined, and had to be cleared by army engineers. Nevertheless, the reconnaissance party found large quantities of serviceable equipment, including locomotives from several countries. French civilian railwaymen returned to Cherbourg after the American occupation of the town and reported for work in the yards and locomotive depot.

Eisenhower Thanks the Railways

On "D" Day, the Broad Street Goods Staff Dining & Social Club (L.M.S.R.) sent a goodwill wire to General Eisenhower, who immediately replied as follows :—

"I thank you on behalf of all ranks of the Allied Forces under my command for your message of goodwill and your pledge of full support. I would like, in return, to assure you that we do not forget the essential part played by the railway workers in keeping our supply lines open."

First U.S.A. Timetable Issued in France

Timetable No. 1 for the United States Army Military Railroad, in Normandy, was issued on July 17, 1944, for Major-General Frank S. Ross, Chief of Transportation, European Theatre of Operations, by Colonel Norman A. Ryan, Assistant Chief of Transportation, Military Railways Division. This timetable, which took effect at 00·01 Double War Time, on Monday, July 17, lists scheduled times and stations with mileage from station to station. It has been printed for the "information and government of Military Personnel." The table includes footnotes to the effect that with "Double track operation, normal current of traffic is to the right. Trains 1, 2, 3, and 4 will stop at all stations listed above, and eastward trains are superior to trains of the same class in the opposite direction."

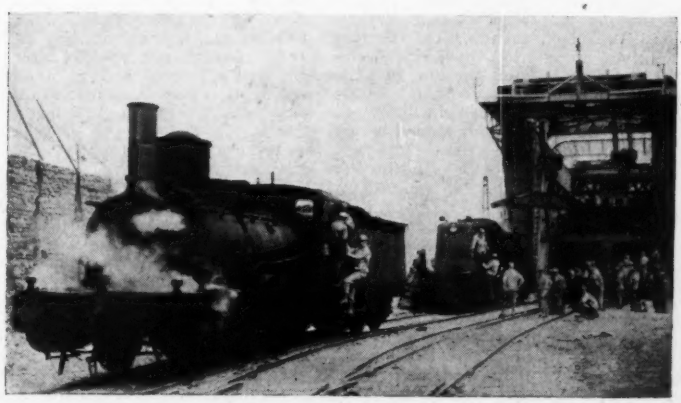
Transport on National Day of Prayer

To assist the public to attend places of worship on the National Day of Prayer, on Sunday last, September 3, the Minister of War Transport decided to relax on that day the general restriction on Sunday morning bus services. This relaxation, however, applied only in places where vehicles could be made available without placing undue strain on depleted maintenance staffs and crews.

Italo-German Transit

It was reported on August 27 by the German radio that hospital trains carrying severely-wounded German troops from Italy were to be allowed to pass through

Transporting Railway Rolling Stock to France



The Southern Railway steamer "Twickenham Ferry" was the first to discharge a cargo of rolling stock on the Cherbourg Peninsula; it consisted of a complete train of goods wagons with locomotive. Above is seen a 50-year-old French locomotive with French driver towing a 65-ton diesel-electric locomotive ashore on the Cherbourg Peninsula. Right is Captain S. Hancock, D.S.O., Master of the "Twickenham Ferry"

Switzerland, and that the first of these trains had already made the transit.

A Reuters message from Italy on August 28 stated that Allied Liberators, in an attack on the viaduct over the River Avisio, between Bolzano and Verona, succeeded in making a 75-ft. gap in the structure, thus putting out of service a section of the Brenner Pass Railway.

Motor Vehicles in Algeria

Official French figures show that there were 1,600 motor lorries of 2½ to 4½ tons, 1,350 motor lorries of over 4½ tons, and 320 passenger buses, available for the use of civilians in Algeria, French North Africa, on April 6, 1944.

South African Railwaymen on Active Service

Mr. F. C. Sturrock, Minister of Transport, Union of South Africa, stated recently that 14,000 South African railwaymen had been on active service, and that 9,000 were still serving.

Wagon Loadings in India

Wagon loadings of Indian railways decreased by 4·95 per cent. on the broad-gauge, and increased by 1·94 per cent. on the metre-gauge, in March, 1944, compared with March, 1943. From April 1, 1943, to March 31, 1944, wagon loadings were lower by 1·06 per cent. on the broad-gauge, and higher by 6·07 per cent. on the metre-gauge.

U.S.A. Railway Equipment for Russia

In his report to Congress on Lend-Lease operations, covering the period from March 11, 1941, to June 30, 1944. President Roosevelt recorded that last year the U.S.A. began a programme of shipments of railway rolling stock to the Soviet Union. By June 30 of the present year, 339 locomotives and 1,640 flat wagons had been sent. Shipments of railway rails and accessories had been increased, and by June 30 more than 455,000 tons had been despatched; this tonnage included rails and accessories, and locomotive and wagon wheels and axles, to aid the rebuilding and expansion of the Soviet railways.

In March last, General L. G. Rudenko, of the Russian Army, formally "launched" the first of 800 steam locomotives being built for the Soviet Government by the Baldwin Locomotive Works; it was a modernised version of the 5-ft. gauge Decapod type built by the Baldwin Locomotive Works for Imperial Russia during the last war. All the 800 will be superheated, and the construction programme is under U.S. Army supervision.

Motor Vehicles in Sweden

Statistics compiled by the Royal Statistical Central Bureau of Sweden give a total of 78,657 passenger motorcars, motor lorries, and buses registered on December 1, 1943. Of these, 71,701 were operating with producer-gas equipment.

Heavy Newfoundland Traffics

The volume of goods carried by the Newfoundland Government Railway doubled last year, compared with 1942, rising from 500,000 tons to 1,000,000. Vast quantfties of construction material and equipment were moved. Wagon mileage increased from a normal figure of approximately 3,800,000 to 7,500,000 last year; locomotive mileage rose from 1,000,000 to 7,700,000. The number of passengers transported in 1943 totalled 415,000, compared with 146,000 in the year before the war.

How U.S.A. Goods are Moved in Wartime

During the year 1943 the transport systems of the U.S.A. moved inter-city goods to the extent of more than a million million ton-miles. An estimate of the Association of American Railroads, based on reports of the Interstate Commerce Commission and other official sources, shows that 72 per cent. was moved by railway, 11 per cent. by ships on the Great Lakes, 10 per cent. by pipeline, 4½ per cent. by motor lorry, and 2½ per cent. on inland waterways.

The U.S.A. Ticket Ramp

The fight against the wartime "black market" in railway tickets and seat and berth reservations in the United States will be carried a stage further if a Bill introduced into the House of Representatives by Representative Lea, Democrat of California and Chairman of the House Committee on Interstate and Foreign Commerce, should become law. This Bill, No. H.R. 4573, seeks to amend the Interstate Commerce Act in such a way as to make "black market" operations in the sale of tickets and reservations a Federal offence. It would be illegal for any employee to solicit or receive any gratuity, over the published fare, in connection with the sale or reservation of such tickets for privileged users. It also would authorise the Interstate Commerce Commission, if conditions so required, to establish maximum service charges that persons other than railway employees may collect for obtaining or making reservations for railway transport.

Paris Bus Services Restored

Several Paris bus services have resumed working, according to the Algiers radio of September 2.

Polish Railwaymen in Great Britain

A meeting of the Association of Polish Railwaymen, the first in Great Britain, was held in Edinburgh on August 13. The meeting was presided over by Mr. Kazimierz Tyszka, a former Minister of Transport in Poland. He said that the purpose of the meeting was to settle some questions of organisation and to discuss the position of the Polish railways after that country had been freed.

Brigadier J. P. S. Greig, of the Ministry of War Transport, described the association as the vanguard of yet another Polish Army, namely, the Polish Railway Army, which would have the task of restoring the railways in Poland. This was a task which all railwaymen would agree was hardly less important than the actual fighting, because, without efficient railways and communications, there could be no economic prosperity and no peace.

Messages of goodwill and greetng were received from Mr. P. Tofahrn, Acting Assistant General Secretary of the International Transport Workers' Federation; Mr. J. Dubus, of the Belgian Ministry of Transport; Mr. Thomas Arciszewski, President-Designate of Poland and Chairman of the Polish Socialist Party; the National Union of Railwaymen; and the Railway Clerks' Association.

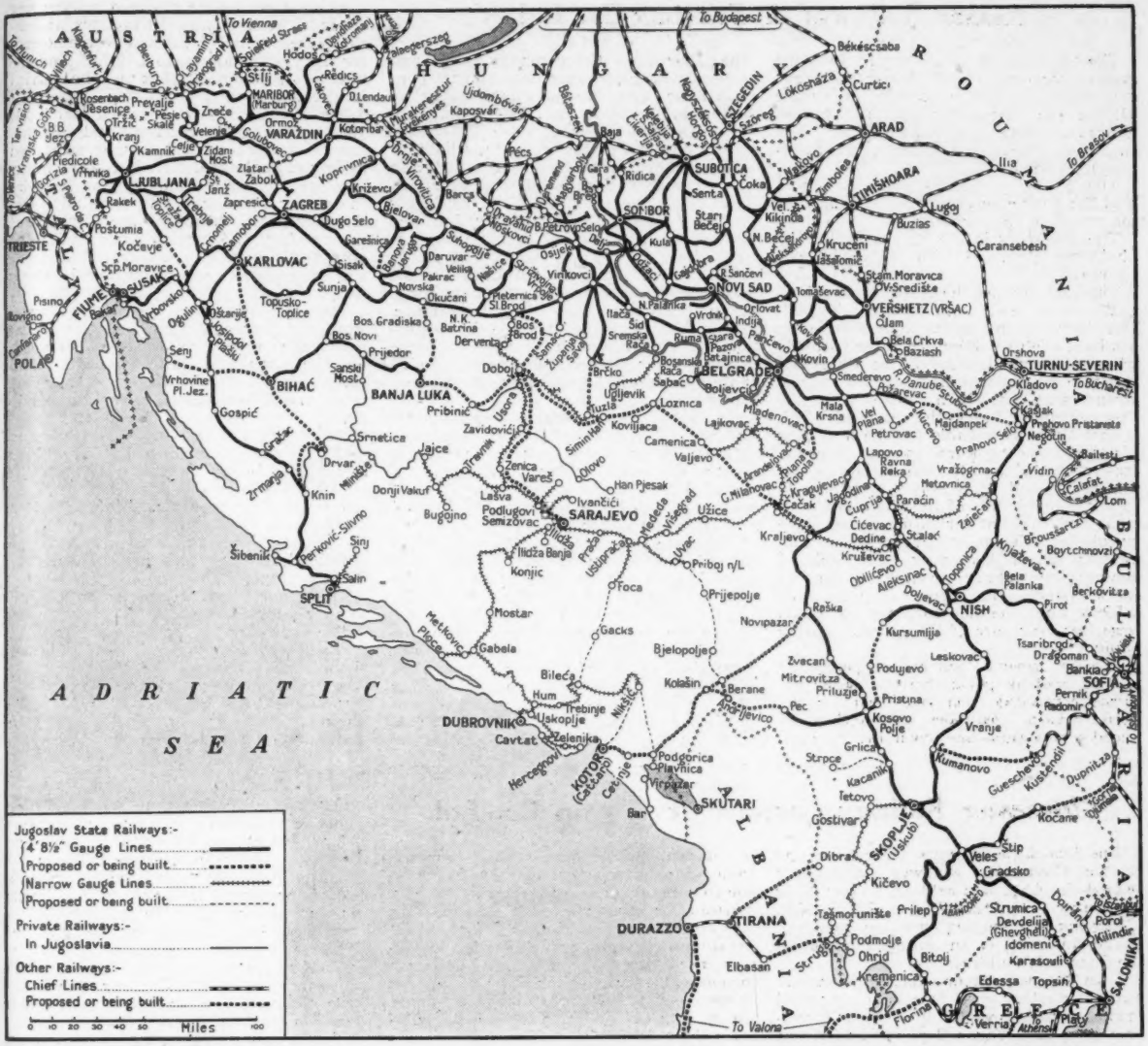
In connection with Brigadier Greig's remarks, we may add that it is known that there is a secret railway militia in Poland, which appears to have been well organised and to have played no unimportant part in sabotaging enemy lines of communication.

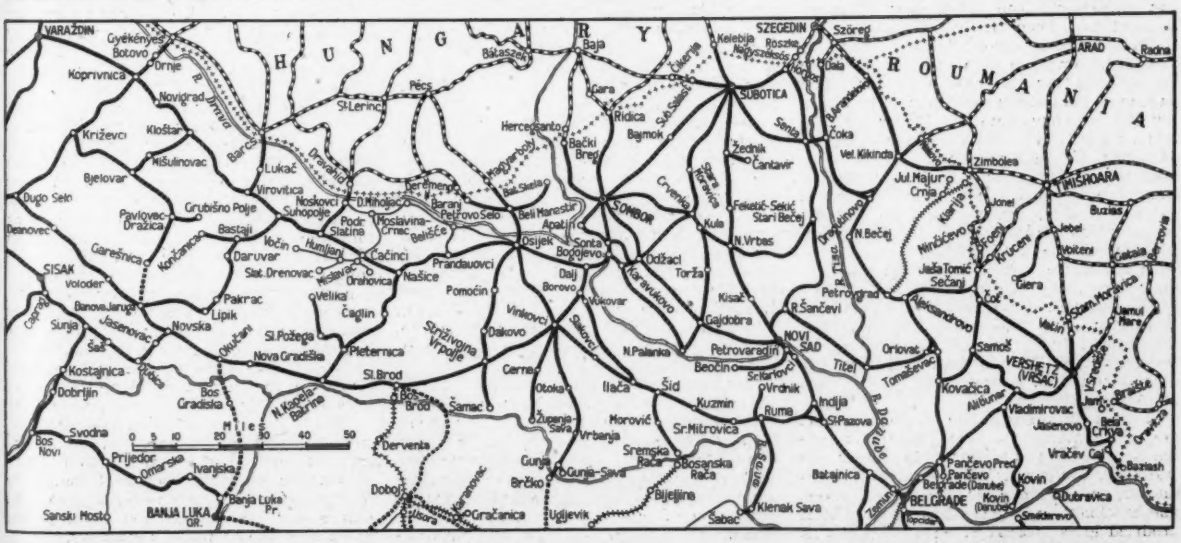
A Wartime U.S.A. Reconstruction Feat

A remarkable feat of wartime emergency reconstruction has been effected by the New York Central System, on the main line of its Cleveland, Cincinnati, Chicago & St. Louis ("Big Four") subsidiary at Bellefontaine, Ohio. The locomotive depot at Bellefontaine, which normally services 100 locomotives daily, and is the most important on the New York Central west of Buffalo, was set on fire by a spark from a welding torch at midday on September 4, 1943, and in 3½ hr. was almost entirely burned out. All the modern facilities for repair were lost, with the machine shop, 33 stalls of the engine shed, water-softening plant and water supply, and the power line to the turntable; and 23 locomotives were so badly damaged as to be unusable.

As this happened at a time of peak traffic, it was a crippling blow, and the more so as 2½ years of work at the depot, to improve its facilities, had just been completed. Nevertheless no passenger or freight trains were delayed. All locomotivemen on trains approaching Bellefontaine were instructed to fill their tender tanks at the nearest supply points; engines on goods trains were detached, run over ash-pits and serviced in the open air, and returned to their trains. Only 3½ hr. after the fire had been extinguished, the turntable was again in use. The damaged locomotives were sent to Beech Grove, Indiana, for repair, and the first of them was back in service 9 days later. Reconstruction of the destroyed facilities was begun immediately. Motor lorries, cranes, and bulldozers were secured from contractors in neighbouring cities, and brought over public highways to the site, to clear the debris.

On the next day, engineering and operating officers met on the site, and decided first to rebuild the 16-stall section of the engine-shed that had been most recently completed; a list of timber and other critical materials needed was wired to the War Production Board and the necessary priorities were wired back. Brick was a difficulty, as several of the smaller brick companies in the vicinity were out of business by reason of labour shortage, but a suitable stock was found at Canton, Ohio, and shipment began immediately. To avoid the use of critical materials, as far as possible, there was much improvisation in design and construction on the site, and some of the steelwork had to be redesigned in order to work in second-hand material that was available at the time. Fortunately the work was assisted throughout by good weather; as a result three of the first stalls, built without detailed plans, were finished and in use by October 16, seven weeks after the fire; the entire 16-stall section was in use a month later. By December 15 the machine shop was ready for the installation of machinery, and 50 per cent of normal operations were in progress; the drop pit section was ready on December 30, and two days later all the depot employees who had been distributed temporarily to adjacent depots, were back at Bellefontaine. By January 24, four months and three weeks after the fire, the entire depot had been rebuilt and re-equipped, and work was once more proceeding normally. Only the old concrete foundations were incorporated in the new buildings; the damaged floor and pits had to be rebuilt. As a result of the fire, no creosoted timber has been used in rebuilding; and the entire design was based on the replacement of steel by other materials as far as possible, chiefly by the use of reinforced concrete. All the new stalls in the engine-shed are 130 ft. long, and opportunity has been taken, in the rebuilding, to effect further improvements on the previous layout.





The railways of Jugoslavia and adjacent territories. These maps have been revised in accordance with the latest information to reach this country. The boundaries are those of 1939, before Axis partitioning

Assam Railways & Trading Co. Ltd.

The adjourned sixty-third ordinary general meeting of the Assam Railways & Trading Co. Ltd., was held on August 31, at the company's offices, 154-156, Fenchurch Street, London, E.C. Mr. E. A. A. Joseph (Chairman of the company) presided.

The Secretary (Mr. S. Maclean Jack) read the notice convening the meeting and the report of the auditors.

The following is the statement by the Chairman circulated with the report and accounts:—

The meeting and the report to members again have been unavoidably delayed. The form of the statement of accounts has been slightly altered to agree with the latest recommendations of the Chartered Institute of Accountants. A preliminary arrangement has been made with the Government of India, the result of which is that the rent payable for the first year of the lease appears in the revenue account as £120,000. Negotiations are continuing and it is hoped very shortly to settle the details of the working agreement and the rent for future years. The rental as shown allows for certain charges which last year were debited against the railway revenue. On the other hand, the lease includes the colliery line, the net earnings of which were last year part of the general trading profit.

In the general revenue account the general trading profit shows a slight decrease compared with last year for the above reason; coal sales, too—with a reduced production—are down and costs up. The business of the company's saw and veneer mills and other departments continues at a maximum but costs are higher. Dividends on the holdings in other companies are the same.

The business of the company's liability for excess profits tax has been settled, and the assessments for the different years are now being agreed, but with the larger revenue coming into consideration the provision for taxation is naturally increased.

Air-raid precautions expenditure is not so high as last year, but premium for a war risk insurance now compulsory under Indian law has to be debited. The directors have also thought it wise to make provision for depreciation and deferred maintenance of the assets in the trading department.

In the balance sheet, stores under Indian Government control represent railway stores taken over at the beginning of the lease. Indian Government net balances on account is a new item representing the balance between freight and rental due on either side.

The question of the way the authorised capital was shown in the balance-sheet was raised by some shareholders at the last meeting. After giving the matter the most careful attention and taking expert advice, the directors have adopted the present form. They are advised that the form gives an entirely correct, if somewhat unorthodox, view of the company's rather peculiar position, which it is hoped will be made even clearer by the changes made in the method of stating the figures.

The balance at the credit of net revenue account, after paying all charges, debenture interest and dividends recommended for the year, amounts to £49,716, and the directors recommend that this be carried forward.

The results of the year ended March 31, 1944, are not yet received and all that can be said at present is that sales and raising of coal are better, but costs generally are higher. An inquiry was held by the Government into the possibilities of increasing the output of the mines, but the result of the inquiry agreed with the company's own explanation, that what was necessary was an increased labour force.

The Japanese have been driven away from our part of Assam, and this threat —for the present at least—is removed, but the company's staff has continued to carry out a very heavy programme of work under exceptionally trying conditions.

Addressing the meeting, the Chairman said: In the discussions that have been in progress during the last two years, the question has arisen of a sale of the line, but I am not yet in a position to say to what result these conversations are likely to lead. If they do lead anywhere the shareholders will be informed immediately of any proposal.

The report and accounts were unanimously adopted.

The re-election of Mr. Balfour Smith as a director was confirmed; the auditors, Messrs. Price Waterhouse and Company were re-appointed; and the proceedings terminated with a vote of thanks to the Chairman and directors and also to the staff in Assam and London.

Gloucester Railway Carriage & Wagon Co. Ltd.

The fifty-sixth ordinary general meeting of the Gloucester Railway Carriage & Wagon Co. Ltd., was held on August 30 at Gloucester. Sir Leslie Boyce, K.B.E., M.P. (Chairman & Managing Director), presided.

The following is an abridged report of the Chairman's address:—

I am happy to report that the company has had another very successful year, and that the trading results of both our associated company, Wagon Repairs Limited and our subsidiary, the Gloucester Foundry Limited have been highly satisfactory.

The company's profit for the year was £137,224, compared with an adjusted figure of £117,921 for the previous year. The burden of taxation is such that no less than £96,000, or approximately 70 per cent. of this amount, will be absorbed in meeting the demands of the Exchequer. Thus after making provision for E.P.T. and income tax there remains a net profit balance of £41,224, which, when added to £17,366 brought forward from last year, gives a disposable balance of £58,590.

In pursuance of their conservative policy, your directors have appropriated £20,000 to the general reserve, which now stands at a quarter of a million pounds, and they recommend that the rate of dividend be maintained at 7½ per cent. and that the carry-forward be increased by £1,537, thus making it £18,903.

Most of the items in the revenue account are self-explanatory. On the debit side the depreciation is higher than a year ago due to certain increases in the rates of depreciation, and on the other side of the account the dividends on the investments have been credited gross instead of on a net basis as heretofore. This new arrangement has, *inter alia*, three advantages. In the first place, it enables the income of the company, from whatever source it may be derived—whether manufacturing, repairing, hiring, financing or investments—to be shown on an exactly comparable basis before taking taxation into account. Secondly, all income-tax payable on the company's income, whether paid direct or by way of deduction, is collected into one figure which, with the provision for E.P.T., represents the total taxation that is payable on the profits for the year. Thirdly, it avoids the apparent and otherwise inevitable fluctuations of investment income, as shown in the revenue account, whenever there is an alteration in the standard rate of income tax.

In addition to the provision for deferred repairs, the minimum rates of depreciation which have been written off the assets of the company, whether in respect of buildings, machinery or wagons, in every case have been at least equal to the maximum amount allowed by the Inland Revenue for taxation purposes. In these circumtances, and having regard to the fact that the work-in-progress, stock-in-trade, and investments are all conservatively valued, I can say, without reservation, that the figures in the accounts disclose a very sound financial position.

Our works have been as fully and as efficiently maintained as the limits of available labour, materials and Government licences have permitted. During the past 18 months, several notable and permanent improvements have taken place affecting the efficiency of the works management, generation of power, the handling of materials and last, but not least, the physical comfort and safety of those employed in the works..

For a considerable time we have been giving very careful thought to the question of how best we can reduce to the minimum the period which must elapse between the cessation of hostilities and the full resumption of our normal trading, and have made our plans accordingly. In this connection, I am glad to say that during the past year we have secured substantial orders for types of rolling-stock which will be required as urgently in peace as in war; and that these contracts are already in production alongside others of a purely wartime character. The labour employed on this other Government work is to a large extent the same as would normally be employed by us, and could be transferred at short notice to augment the output of our regular products.

In spite of labour dilution, the output from these works during the year, both in volume and value, was the greatest in the history of the company. The time taken in getting back to normal conditions must to some extent depend on the speed at which the demobilisation of skilled men from the Forces is carried out. As an efficient railway system will be a prerequisite of large-scale post-war social and economic developments in most countries including our own, skilled men previously employed in the manufacture of rolling stock should be among the first to be released.

I wish to pay a sincere and well-deserved tribute to the members of the staff, and particularly Mr. G. C. Brinkworth, the General Manager, all of whom have rendered able and conscientious service to the company during the past year; also I desire to place on record my grateful thanks to all the other employees—both men and women—for their continued loyalty and devotion to the company's interests.

The report and accounts were unanimously adopted.

The Institute of Transport

Last year members of Council of the Institute of Transport gave an informal luncheon at the Connaught Rooms, London, to members of the trade and technical Press dealing specifically with transport matters. The idea was to review certain of the Institution's activities in a way which had not been possible more publicly in these days of less frequent gatherings. It was realised that due to the absence of public functions, evening meetings, and so on, there had been for some years a lack of contacts between the Institute and the public *via* the trade and technical press. The second of these functions was held on Tuesday, and among those present were :—

Messrs. Arthur Cooke (*The Aeroplane*); R. P. Biddle; E. J. Groom (*The Commercial Motor*); F. W. Crews (Secretary); Group-Captain S. A. Dismore; Messrs. W. H. Wendon (*Fairplay*); C. M. Poulson (*Flight*); S. R. Geary, O.B.E.; Sir Alexander Gibb, G.B.E., C.B., F.R.S. (Past President); Messrs L. W. Gupwell (a Vice-President); D. H. Handover; R. H. Jones, O.B.E. (a Vice President); H. Cuthbert (*The Journal of Commerce*); S. Gresty (*Lloyd's List & Shipping Gazette*); A. R. Bell (*The Locomotive*); G. Mills (a Vice-President); C. F. Klapper (*Modern Transport*); L. D. Kitchen (*Motor Transport*); L. H. K. Neil; J. S. Nicholl, C.B.E. (Past President); H. J. Ferguson (*The Passenger Transport Journal*); J. Paterson, M.C.; E. K. Holmes (*The P.L.A. Monthly*); J. A. Kay (*The Railway Gazette*); G. S. Rider, M.B.E.; J. P. Taylor (*Shipbuilding & Shipping Record*); Major R. A. B. Smith, M.C.; Messrs. C. H. Sutherland; G. W. P. McLachlan (*Syren & Shipping*); G. S. Szlumper, C.B.E., T.D. (Past President); T. E. Thomas, C.B.E. (Past President); J. Finlay (*The Transport World*); A. B. B. Valentine; H. E. O. Wheeler, O.B.E.; Sir William Wood (President); Mr. W. G. Sharp (*World's Carriers*).

The President, Sir William Wood, was in the Chair and in the course of expressing his indebtedness of the Institute to the trade and technical Press for its help, particularly during the lean periods of the war, said that he hoped it would be possible soon to return to their full pre-war activities. The Institute would be celebrating its Silver Jubilee in the near future. During the war the Institute had held and developed its membership.

Mr. J. A. Kay (Editor, *The Railway Gazette*), who replied on behalf of the guests, suggested that in the contacts between the heads of the transport industry and the Press there should be more differentiation between the daily and the trade and technical papers, leading to more intimate contact with the heads of staffs by the latter. He instanced the growing practice of big organisations appointing Public Relations Officers who, useful and important as they were, were inclined to assume that all inquiries should go through them, and that no contacts should be made directly with the heads of departments. He hoped that the representatives of the transport industry would bear that in mind.

This was supported by Mr. Nicholl, who observed that it had been stated that one of the results of the last war was the substitution of truth by propaganda. He suggested that some Press Relations Officers succumbed to the temptation to blazen a sensational story in the daily papers for whatever glory might be attaching to them for producing a sheaf of press cuttings.

British—U.S.A. Railway Photographic Exhibition

In conjunction with the L.M.S.R., L.N.E.R., and G.W.R., the Southern Railway has produced an Anglo-American Railway Photographic Exhibition prepared with the help of the U.S. Army Transportation Corps and the American Office of War Information. The Exhibition is dedicated to "the men and women of two nations who in peace and war uphold the tradition of railway service" and sets out to show some aspects of American Railways as compared with their British counterparts.

Famous trains in the U.S.A. are shown side by side with those equally famous in this country, such as the "Coronation Scot" and "Silver Jubilee." Stations, bridges, and signal boxes are also shown.

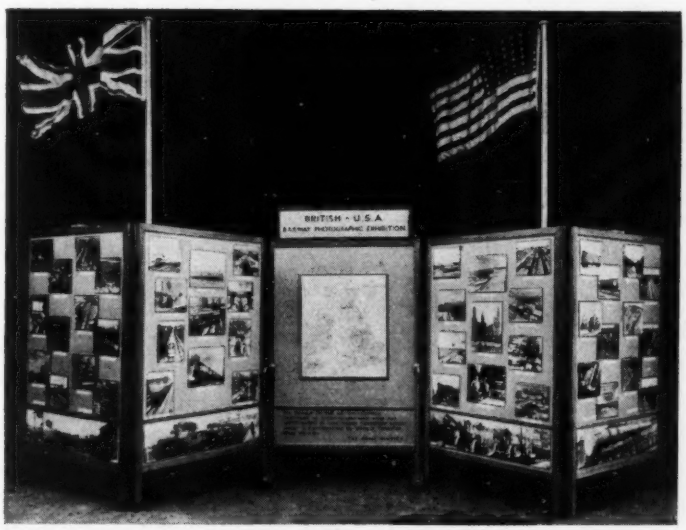
The exhibition was opened at the Grosvenor Hotel, London, S.W.1, on September 1, by Colonel Norman Ryan, General Manager of the Western Lines, Chicago, Milwaukee, St. Paul & Pacific Railroad, who is now Assistant Chief of Transportation, U.S. Army. It will commence with a tour of provincial towns on the Southern Railway.

Mr. G. H. Loftus Allen, Chairman, R.E.C. Publicity Committee, welcomed Colonel Ryan, who, in opening the exhibition, said he welcomed the opportunity to express publicly the esteem and appreciation that the U.S. Army had towards the British railways. Although the exhibit seemed to be somewhat of a Southern show, the other railway companies held an equal place on the team, and in addition to the railways he would be remiss if he did not mention the L.P.T.B. As one of the first of the Transportation Corps to arrive in England, it had become his duty to negotiate ways and means of moving U.S. traffic by rail. Inasmuch as several services had to use the same transport system, it immediately became apparent that a form of joint usage should be promulgated. The problem had been with British, Canadian and Naval friends, and a working agreement reached with the railways which provided for a smooth flow of traffic, and permitted the successful culmination of invasion plans, which would have been a failure had not the railways performed a superhuman job. In the U.S. army "Superior" was the highest rating that could be given, and he could say that this rating had been earned and was due to the British railways as a whole.

He was glad to see that it had been thought necessary to get the exhibition together because the railways would have to be very modern and up-to-date to maintain their prestige in post-war days.

When he first came to England he got the impression that everything was small along the railway lines, and it was some little time before he could convince himself that there was a reason for the small equipment and British methods of operation. He was now thoroughly convinced and knew the reasons and could see that, judging from his experience as a General Manager of a large railroad that Great Britain had a very efficient plant, and one that fitted the characteristics of the United Kingdom, and handled its rail business efficiently. Rank and file, both men and women, on British railways had performed a miracle in his estimation.

Mr. H. E. O. Wheeler, Deputy Traffic Manager, Southern Railway, thanked Colonel Ryan for his attendance.



The stands of photographs used for the British-U.S.A. Railway Photographic Exhibition

Progressive Boiler Repairs at Gorton Works, L.N.E.R.

(*Concluded from page* 236)

tapping and running at the same speed.

Operation 6

The boiler, with staybolts fitted, is moved to point 6(*a*) or 6(*c*), where these are riveted, and all rivets previously removed replaced by new ones, plates caulked, and minor repairs completed.

After these operations the boiler leaves the belt ready for tubing, mounting, etc.

By the process described above much time and transport of boilers is saved, compared with previous practice which necessitated moving them from one shop to another for repairs after stripping and before replacement in the engine frames; the whole of this work is carried out now in the one shop.

Notes and News

New Brazilian Air Line.—The Linha Aérea Transcontinental Brasileira S.A., on May 31 was authorised by the Ministry of Aviation to engage in commercial aviation in Brazil.

North British Locomotive Co. Ltd.—The directors have authorised payment on September 15, of a dividend on the preference stock of 2½ per cent., less tax, in respect of the half-year ended June 30, 1944.

Early Stephenson Locomotives in France.—At the opening meeting of the 1944-45 session of the Newcomen Society, a Paper is to be presented by Mr. E. A. Forward entitled "Stephenson Locomotives for the St. Etienne & Lyons Railway, 1828."

Colombian National Railways.—On April 25 last, the National Government of Colombia reorganised the Administrative Council of National Railways. Instead of the executive board of five members charged with the operation of the Government-owned railways, the system is now being managed by an executive director and an advisory board of six members.

Metropolitan Assented Stock.—Glyn, Mills & Co., the Trustee and Registrar, announce that the funds in hand available from the recent payment on account of interest on the underlying London Passenger Transport Board "C" stock are not considered sufficient to justify an interim payment on the Metropolitan Assented Stock for the year to December 31, 1944, and will be carried forward towards the payment of the interest for the year ending December 31, 1944, which falls due not ater than May, 1945.

The L.M.S.R. Headquarters Staff Grove Allotment Association.—The third annual show was held on Saturday, August 19, in the canteen of the Grove Estate. Mr. H. J. Comber (Chief Officer for Labour & Establishment) said how much the company appreciated the efforts made by the staff during a year of unusual gardening difficulties, and congratulated the committee on staging a very fine exhibition. Mr. T. W. Royle, Vice-President, L.M.S.R., who performed the opening ceremony, endorsed Mr. Comber's remarks, and said that in past years the produce of the show had gone to the Watford Peace Memorial Hospital and the Watford Nursing Institute, and the profits (last year £30) to the L.M.S.R. Prisoner of War Fund. This year it is the intention to give the money to the British Red Cross Society.

The Berne-Schwarzenburg Railway.—This 19-mile standard-gauge electric railway, belonging to the same group as the Berne-Lötschberg-Simplon Railway, carried 617,578 passengers in 1943, compared with 548,709 in 1942.

Thomas Tilling and Cornhill Insurance.—It is announced that Thomas Tilling Limited has acquired from existing shareholders a substantial portion of the total shares of the Cornhill Insurance Co. Ltd. The business will be carried on as hitherto. No change in the management is contemplated. (See also page 239).

Houses for Railway Workers in Chile.—Throughout southern Chile, houses for railway workers are to be built by the Railway Workers' Savings Bank at a cost of 180,000,000 pesos. It is expected that a period of three years will be required to complete the intended plan for groups of one- and two-family houses, and community residences.

Assam Railways & Trading Co. Ltd.—This company's railway of 111 miles was in consequence of the war taken under the control of the Government of India for the period of the emergency from April 1, 1942. The rental of the railway (£120,000) and the working profits of the trading departments of the company, together with income from investments, etc., amounted during the year ended March 31, 1943, to £234,373. In the previous year the working profits of the railway and trading departments, together with interest and dividends, etc., amounted to £205,681. After making deductions for contribution to provident funds, gratuities, exchange, directors, remuneration and making provision for renewals and depreciation, there is left £171,244 (£156,344). Adding £46,386 brought forward makes £217,630. Debenture interest, preference dividends and the amount written off new issue expenses take £67,914, and the directors have provided for estimated taxation liabilities in India

New L.M.S.R. Railbar at Liverpool

Liverpool Post] [& Echo

A scene at the opening, referred to in our last week's issue, of the railbar at Liverpool (Lime Street), L.M.S.R., on August 22, by Mr. Arthur Towle, Controller, L.M.S.R. Hotel Services (nearest the bar). Next to him is Mr. H. E. Pedley, District Passenger Manager, Liverpool, and on the right is Mr. A. H. Holton, Stationmaster, Liverpool (Lime Street), L.M.S.R.

British and Irish Railway Stocks and Shares

Stocks	Highest 1943	Lowest 1943	Prices Sept. 5, 1944	Rise/Fall
G.W.R.				
Cons. Ord.	65¼	57¼	58	—
5% Con. Pref. ...	120½	108	116½	– 1
5% Red. Pref. (1950)	110½	106	105	—
5% Rt. Charge ...	137½	123½	131½	—
5% Cons. Guar. ...	135½	121 7/16	129½	—
4% Deb.	118	107½	114½	—
4½% Deb.	119	109 7/16	115½	—
4½% Deb.	124¼	116	120½	—
5% Deb.	138	127	134½	—
2½% Deb.	77	72½	74½	—
L.M.S.R.				
Ord.	34 1/16	28	30	—
4% Pref. (1923) ...	66½	58	58½	—
4% Pref.	80⅜	73	75½	—
5% Red. Pref. (1955)	105½	102	103½	+ ½
4% Guar.	107	98½	100½	—
4% Deb.	109¾	103¼	105	—
5% Red. Deb. (1952)	111½	108	109½	—
L.N.E.R.				
5% Pref. Ord. ...	12 3/16	7⅜	8½	—
Def. Ord.	5⅜	3⅜	4¼	—
4% First Pref. ...	66½	57½	57½	—
4% Second Pref. ...	36½	30½	31	—
5% Red. Pref. (1955)	99⅜	93	99½	—
4% First Guar. ...	102¼	94	98	—
4% Second Guar. ...	93½	85⅜	90	—
3% Deb.	86⅜	78⅜	82	—
4% Deb.	109 7/16	101⅜	104½	—
5% Red. Deb. (1947)	106½	102	103	—
4½% Sinking Fund Red. Deb.	108	103½	105½	—
SOUTHERN				
Pref. Ord.	80	72½	74½	– 1
Def. Ord.	26⅜	20⅞	24	—
5% Pref.	119½	106⅜	115½	– ½
5% Red. Pref. (1964)	114	108½	113½	—
5% Guar. Pref. ...	136	122	129½	– 1
5% Red. Guar. Pref. (1957)	117	109¾	113½	—
4% Deb.	117½	106	112½	—
5% Deb.	137	126	133½	—
4% Red. Deb. (1962-67)	112	106½	109½	—
4% Red. Deb. (1970-80)	112	107	109½	—
FORTH BRIDGE				
4% Deb.	109	104⅞	104	—
4% Guar.	105	102½	102½	—
L.P.T.B.				
4½% "A"	125 11/16	114	120½	—
5% "A"	133 3/16	123	130½	—
3% Guar. (1967-72)...	100½	97	99	—
5% "B"	124	114	121½	—
"C"	72	53	70	– 1
MERSEY				
Ord.	34½	27	35	—
3% Perp. Pref. ...	68	59½	69	—
4% Perp. Deb. ...	104	102½	103	—
3% Perp. Deb. ...	83	78½	79	– 1
RELAND*				
BELFAST & C.D.				
Ord.	9	6	10	+ ½
G. NORTHERN				
Ord.	24½	16	26	—
Pref.	—	—	42	+ 1
Guar.	—	—	65	– 1½
Deb.	—	—	85⅞	—
G. SOUTHERN				
Ord.	30	9½	57½	+ ½
Pref.	30	11	57½	+ ½
Guar.	64	26½	72½	—
Deb.	88⅛	51⅛	94 1/16	—

* Latest available quotations

and the United Kingdom £100,000, leaving £49,716 to be carried forward. (See also page 244).

Peruvian Railway Improvement.—The 3-ft. gauge railway connecting the Ancos coalfields with the port of Chimbote, *via* Huallanca, in Peru, has recently been improved to increase its capacity. Between August and December of last year, some 16,000 tons of coal were handled by this railway for export to Argentina, Chile, and Uruguay.

New Station Building in Slovakia.—A new station building was opened to the public at Brezno nad Hronom on June 5. Brezno is on the southern main line of Slovakia (Zvolen-Margecany), 42 miles to the east of Zvolen, and here the line leading *via* Tisovec to Hungary branches off.

Pan-American Highway Conference.—The fifth Pan-American Highway Conference, which was originally planned for 1943, and was subsequently announced for the latter part of the summer of this year, has now been fixed. It is to be held in Lima, Peru, for 10 days, beginning on October 12.

Gloucester Railway Carriage & Wagon Co. Ltd.—Trading profit for the year ended May 31, 1944, was £168,541 (£153,583), and investment and other income amounted to £17,793 (£8,878). Net profit after making provision of £30,161 (£25,583) for depreciation, and allowing for all revenue charges, and for war damage insurance, is £137,224. Adding £17,366 brought forward makes £154,590. Deducting £96,000 for taxation leaves £58,590. The dividend for the year is again 7½ per cent., less tax, requiring £19,687, and a transfer of £20,000 is made to general reserve, leaving £18,903 to be carried forward.

Planning for Peacetime Production.—Mr. Harcourt Johnstone, Secretary, Department of Overseas Trade, speaking recently in Birmingham, said that the main problem of industry in its planning for peacetime production was the need for the early release of key men. He said that careful thought was being given to the facilities which could be extended to firms to start their preparatory work, particularly for the recovery of export trade. Consideration also was being given to the revival of the British Industries Fair. It was hoped that during the next session of Parliament it might be possible to introduce legislation to extend export credit facilities.

New Staff Canteen at Peterborough, L.N.E.R.—A new brick-built canteen, to seat approximately 100 persons, was opened at New England, Peterborough, L.N.E.R., on August 30, by the Mayor of Peterborough, Councillor H. W. Kelley. Mr. J. M. Fleming, District Goods & Passenger Manager, Peterborough, L.N.E.R., introducing Mr. Kelley, said how particularly appropriate it seemed that the Mayor, who was himself a railwayman in Peterborough, should perform the ceremony. The canteen, which is operated by John Gardner (London) Limited in conjunction with a local canteen committee and the assistance of Mr. E. K. Portman-Dixon, Canteen Superintendent of the L.N.E.R., will fill a long-felt want among the railwaymen of the district. It will provide a service between 5.30 a.m. and 2.15 p.m., and 3.15 p.m. and 4.0 a.m., and should enable shift workers and others to obtain a good meal at almost any hour of the day or night. Among those present at the opening ceremony, in addition to the Mayor and Mr. Fleming, were :—

Messrs. A. J. Reeves, Town Clerk, F. Smith, City Treasurer, and F. J. Smith, City Engineer, Peterborough ; and from the L.N.E.R., Messrs. A. J. Grinling, District Engineer, Peterborough ; H. E. Stratton, Assistant to Chief Engineer (Steelwork) ; E. K. Portman-Dixon, Canteen Superintendent ; R. C. Randall, representing Mr. George Mills, Divisional General Manager, Southern Area ; S. W. Jesper, representing Mr. George Dow, Press Relations Officer ; E. Haytor, Secretary, L.N.E.R. Savings Bank ; H. Hudson, Secretary, L.N.E.R. Superannuation Fund ; and R. Reynolds, Chief Accountant's Office. Representatives of the railway unions present were Messrs. G. Cox, H. Turner, H. W. Cryer, and E. A. Barber.

The Tavannes-Tramelan-Noirmont Railway.—This 21-mile metre-gauge Swiss electric railway connects Tavannes (on the Bienne to Moutier line) with Noirmont (on the La Chaux-de-Fonds to Glovelier line) near the north-western frontier. Passengers carried in 1943 totalled 437,417, compared with 417,546 in 1942.

Tea Room at Glasgow (Central).—The tea room at Glasgow (Central), L.M.S.R., has been modernised and enlarged, and will now seat about 90 persons. The reconstructed premises were opened on August 22 by Mr. A. Morris, Assistant for Inspection to Controller, L.M.S.R. Hotel Services.

Glasgow Central Station Traffic.—The great increase during the past 21 years in the passenger traffic at Glasgow Central Station was mentioned at a presentation recently made to Mr. John Rankin on the occasion of his retirement from the position of Stationmaster which he had occupied since 1937. It was stated that, shortly after Mr. Rankin went to the Central Station as Assistant Stationmaster, in 1923, there were 20,000,000 annual passengers, as compared with 35,000,000 at present. Mr. Rankin had been responsible latterly for 293 incoming trains and 302 outgoing trains, as well as 390,300 incoming passengers, daily.

U.S.A. Railway Air Lines.—In partnership with the Texas & Pacific Railway, the Missouri Pacific Lines have formed a new company, Eagle Airlines Inc., which has sought authority from the Civil Aeronautics Board to transport passengers, mail, luggage, express, and goods by air over 16 major routes, aggregating approximately 6,000 miles, and, in effect, paralleling the present rail systems and subsidiary highway services of the Missouri Pacific Lines, and the Texas & Pacific Railway. The intention is to provide a complete, modern, co-ordinated transport service by rail, road, and air, for the West and South-West of the U.S.A.

Amendments to Eire Transport Bill.—Among the many amendments which have been deposited in respect of the Eire Transport Bill, the largest is a batch of more than 70 proposed by the Minister himself, the majority of which are drafting amendments. A new section defines more closely the position concerning the carriage of merchandise on mechanically-propelled vehicles. Merchandise thus carried will be deemed for the purposes of the Road Traffic Act, 1933, to be carried for reward unless the contrary is proved. Merchandise delivered to a customer in a trader's own vehicle is exempted from this definition. In a new schedule the Minister will propose that the dissolved Great Southern Railways Company shall have, and be deemed always to have had, power to redeem in cash, by agreement with the holders, any of the following stocks : North Wall Extension, Lines 1 and 2, £100 shares ; 4 per cent. New Ross & Waterford Extension Railways guaranteed stock ; 4 per cent. City of Dublin Junction Railways debenture stock, 1884 and 1887, and the same stock, 1894 and 1897 ; also the preference and guaranteed stock, and the 4 per cent. redeemable (1947) debenture stock. Another new section to the first schedule provides for an agreement between the company, the Dublin Corporation, and the Grand Canal Company for the maintenance, opening, and closing of the Victoria Bridge across the Grand Canal in the County Borough of Dublin.

Travelling Allowances in India.—On the Indian State Railways, the travelling allowance has been increased by approximately 20 to 25 per cent., from March 1, 1944. As the result of representations made to the Agent & General Manager of the Bengal-Nagpur Railway by the President of the B.-N.R. Indian Labour Union, the travelling allowance for all employees on that railway is being increased by about 50 per cent., with effect as from March 1, 1944.

Railway Construction in Spain.—It is reported that construction of an 11·2-mile 550 mm.-gauge railway between Maitena and a point called Barranco de San Juan in the mountainous region of the Sierra Nevada (Granada Province), Spain, which had been discontinued for some years on account of financial difficulties, is to be resumed. The line is intended chiefly for the conveyance of timber felled in the region ; but it is stated that it will also be important in developing tourist traffic in Granada Province.

Increased Traffics in Panama.—The Chiriqui National Railway, a 3-ft. gauge system owned by the State, and located in the province of Chiriqui, Panama, is carrying substantially increased traffics, mainly as a result of the success of the agricultural production programme in that region. Three goods trains are now making two trips weekly between Puerto Armuelles and Chiriqui ; two petrol-driven passenger trains make two trips weekly between that port and Boquete (the northern terminus of the system) ; and a daily service is provided to Potrerillos. The railways of Panama were briefly described (with a map) in our issue of May 21, 1943, page 512.

Contracts and Tenders

Below is a list of orders placed recently by the Egyptian State Railways :—

British Oxygen Co. Ltd. : Nozzles for blow pipes.
Clayton Dewandre Co. Ltd. : Radiator tubes.
Clyde Crane & Engineering Company : Spares for coal transporters.
Old Hill Co. (Powke Lane) Ltd. : Iron chain.
Arthur Balfour & Co. Ltd. : Hand tools.
Ibbotson Brothers & Co. Ltd. : Helical springs.
Philip & Tacey Limited : Instruments and mechanism for measuring, etc.
International General Electric Co. of New York Ltd. : Contact fingers.
A. G. Thornton Limited : Instruments and mechanism for measuring, etc.
Mulcott Belting Co. Ltd. : Bramer belting.
J. Stone & Co. Ltd. : Lighting materials.
I.C.I. Limited : Leather cloth.
Sturtevant Engineering Co. Ltd. : Leather carriers.
Silvertown Lubricants Limited : Engine oil.
James Archdale & Co. Ltd. : Milling machine.

Forthcoming Meetings

September 27 (*Wed.*).—Institution of Railway Signal Engineers, at the Institution of Electrical Engineers, Savoy Place, London, W.C.2, 6 p.m. "The application of carrier telephony to British railway trunk line communications," by Mr. W. Thompson.

Railway Stock Market

Stock markets have been inactive with prices in most sections tending to ease, although there was again very little selling. The rapidity of the Allied advance in Europe has had the effect of continuing to centre market attention on post-war industrial and kindred problems, and sentiment has tended to be affected by the conflicting views and opinions current. Gilt-edged stocks were higher on balance, but 3½ per cent. War Loan and various other stocks failed to hold the whole of earlier gains. Leading industrials were mostly slightly lower as compared with a week ago. Movements in home rails again have been small and fractional; the large yields failed to attract buyers, because of post-war uncertainties, although dividends at around current rates seem likely for some time to come—until there is final agreement on a settlement of post-war transport problems and the position of the railways. As to the latter, it is generally recognised that the control agreement which has proved so beneficial to the country and the Government and has meant only moderate dividends on the junior stocks, and no return whatsoever on L.N.E.R. preferred and deferred stocks, in no way implies that the railways have given up their right to standard revenue as defined in the 1921 Railways Act. Various home railway preference stocks tended to come in for more attention on investment merits and their good yields, and L.M.S.R. senior preference had a firmer appearance at 75¼, at which price they yield 5¼ per cent.

Argentine railway stocks have been inclined to fluctuate, but the general tendency was upward; sentiment reflected hopes of a more reasonable attitude on the part of the Argentine authorities, bearing in mind the important part the railways will be called on to play in the expected expansion of Argentine exports for the rehabilitation of Europe. There has been a fair amount of speculative interest in ordinary and preference stocks of the leading Argentine railways, and debenture stocks attracted attention on yield considerations, with B.A. Gt. Southern 4 per cent. debentures favoured on their investment merits. Reflecting the war news, there have been further gains in French railway sterling bonds. Elsewhere, Antofagasta Railway ordinary was better on the more hopeful outlook for the nitrate industry. Canadian Pacifics tended to recover part of their recent setback, although the view prevails that there may be little likelihood of a higher dividend, bearing in mind the decision not to make an interim payment because of the wages award. Leopoldina 4 per cent. debentures moved higher on anticipations that another interest payment may be impending.

Compared with a week ago, Great Western ordinary eased to 57⅜, with the 5 per cent. preference unchanged at 117, and the 4 per cent. debentures slightly higher at 114½. L.M.S.R. ordinary eased to 30, the senior preference to 75¼, and the 1923 preference to 58¼. L.N.E.R. second preference was 31, and the first preference 57½, with the first guaranteed 98½, and the second guaranteed 90. Southern deferred eased to 24⅛, and the preferred to 74⅜; the 5 per cent. preference was maintained at 116, and the 4 per cent. debentures strengthened slightly to 113, reflecting the firmer tendency in prior charge stocks generally.

In the Argentine section, B.A. Gt. Southern ordinary improved to 13¼, the 5 per cent. preference was 25 and the 4 per cent. debentures 59. Central Argentine issues became more active, with the ordinary 9⅜, the 6 per cent. preference 26 and the 4 per cent. debentures 53. B.A. Western ordinary was 11½, and the 4 per cent. debentures 52½. B.A. & Pacific ordinary improved to 6, and the 4 per cent. debentures were 68½. Elsewhere, Leopoldina 4 per cent. debentures moved up to 55½. United of Havana 1906 debentures remained at 28. San Paulo ordinary was also unchanged at 48. Antofagasta ordinary strengthened to 11, but the preference stock eased slightly to 42. Among French rails, Nord was 86½ and Midi and Orleans both 73½. Canadian Pacifics were slightly better at 15⅜. Basra Light Railway stock was quoted a point higher at 116.

Traffic Table and Stock Prices of Overseas and Foreign Railways

	Railways	Miles open	Week ending	Traffic for week: Total this year	Traffic for week: Inc. or dec. compared with 1942/3	No. of Weeks	Aggregate traffics to date: Totals 1943/4	Aggregate traffics to date: Totals 1942/3	Aggregate traffics to date: Increase or decrease	Shares or stock	Prices: Highest 1943	Prices: Lowest 1943	Prices: September 5, 1944	Yield % (See Note)
				£	£		£	£	£					
South & Central America	Antofagasta (Chili) & Bolivia	834	27.8.44	29,670	+ 880	34	998,290	967,280	+ 31,010	Ord. Stk.	15⅞	10	11½	Nil
	Argentine North Eastern ...	753	26.8.44	17,934	+ 3,504	8	132,960	118,050	+ 14,910	,,	7⅜	5	5	Nil
	Bolivar	174	July 1944	4,907	84	30	36,663	37,405	742	6 p.c. Deb.	22¼	18	17½	Nil
	Brazil	—	—	—	—	—	—	—	—	Bonds	23½	19	19	Nil
	Buenos Ayres & Pacific ...	2,807	26.8.44	113,400	+ 30,600	8	903,780	669,720	+ 234,060	Ord. Stk.	8¼	5½	5½	Nil
	Buenos Ayres Great Southern	5,080	26.8.44	154,860	+ 15,300	8	1,327,380	1,149,780	+ 177,600	Ord. Stk.	17⅛	9½	13½	Nil
	Buenos Ayres Western ...	1,930	26.8.44	60,720	+ 13,860	8	488,580	386,100	+ 102,480	,,	16	9⅞	12	Nil
	Central Argentine	3,700	26.8.44	164,880	+ 17,862	8	1,361,634	1,046,988	+ 314,646	,,	10¾	6½	9½	Nil
	Do.	—	—	—	—	—	—	—	—	Dfd.	4⅛	3	4	Nil
	Cent. Uruguay of M. Video	972	26.8.44	27,395	− 256	8	253,726	249,051	+ 4,675	Ord. Stk.	7⅛	4½	4½	Nil
	Costa Rica	262	May, 1944	26,525	+ 3,664	48	25,679	173,827	+ 7,852	Stk.	16	12½	15	Nil
	Dorada	70	July, 1944	28,381	+ 1,956	30	177,690	146,917	+ 30,773	1 Mt. Deb.	96	92	97½	6½
	Entre Rios	808	26.8.44	23,706	+ 2,886	8	183,474	162,648	+ 20,826	Ord. Stk.	9	5½	5	Nil
	Great Western of Brazil ...	1,030	26.8.44	18,400	+ 3,700	34	730,100	530,000	+ 200,100	Ord. Sh.	59/9	24/4½	27/7½	Nil
	International of Cl. Amer. ...	794	July, 1944	$577,243	− $3,278	30	$4,777,756	$4,485,160	+ $292,596	—	—	—	—	—
	Interoceanic of Mexico ...	—	—	—	—	—	—	—	—	1st Pref.	2⅜	1⅛	1	Nil
	La Guaira & Caracas... ...	22½	July, 1944	8,510	+ 960	31	54,940	61,140	− 6,200	5 p.c. Deb.	90	80	79	6½
	Leopoldina	1,918	26.8.44	45,891	+ 12,117	34	1,551,608	1,158,972	+ 392,636	Ord. Stk.	7½	4	5	Nil
	Mexican	483	21.8.44	ps. 448,900	+ ps.74,900	7	ps. 3,471,600	ps. 2,956,800	+ ps. 514,800	Ord. Stk.	1⅛	⅛	⅛	Nil
	Midland Uruguay	319	July, 1944	18,039	+ 1,585	4	18,039	16,454	+ 1,585	—	—	—	—	—
	Nitrate	382	15.8.44	8,613	+ 1,641	33	119,248	93,250	+ 25,998	Ord. Sh.	83/9	71/3	70/6	£3 10 0
	Paraguay Central	274	25.8.44	$68,939	+ $16,939	8	$453,044	$444,870	+ $8,174	Pr. Li. Stk.	75	51½	72	9½
	Peruvian Corporation ...	1,059	July, 1944	118,640	+ 18,622	4	—	—	—	Pref.	17⅜	10⅛	11½	Nil
	Salvador	100	Apr., 1944	c 152,000	+ c 30,000	43	c 1,310,000	c 1,034,000	+ c 276,000	—	—	—	—	—
	San Paulo	153½	—	—	—	—	—	—	—	Ord. Stk.	71	57	48	£4 3 4
	Taltal	160	July, 1944	1,815	− 1,700	4	1,815	3,515	− 1,700	Ord. Sh.	37/6	20/-	17/6	Nil
	United of Havana	1,301	26.8.44	44,396	+ 1,498	8	383,236	416,480	− 33,244	Ord. Stk.	1/16	3½	3	Nil
	Uruguay Northern	73	July, 1944	1,438	+ 51	4	1,438	1,387	+ 51	—	—	—	—	—
Canada	Canadian Pacific	17,034	21.8.44	1,213,600	+ 55,200	33	39,986,600	36,050,000	+ 3,936,600	Ord. Stk.	18	13⅞	15½	3½
India†	Barsi Light	202	July, 1944	24,878	− 3,817	17	100,365	91,770	+ 8,595	—	—	—	—	—
	Bengal-Nagpur	3,267	July, 1944	988,650	− 17,775	17	4,183,275	4,235,325	− 52,050	Ord. Stk.	104½	101¼	120½	£3 6 6
	Madras & Southern Mahratta	2,939	Mar., 1944	358,125	− 7,925	52	10,447,866	8,913,924	+ 1,533,924	—	—	—	—	—
	South Indian	2,349	20.12.43	199,410	+ 24,449	37	5,321,558	4,562,445	+ 750,113	—	—	—	—	—
Various	Egyptian Delta	607	31.7.44	18,707	+ 3,600	17	222,359	167,163	+ 55,196	Prf. Sh.	6 1/16	2⅞	4	Nil
	Manila	—	—	—	—	—	—	—	—	B. Deb.	45	32	48	Nil
	Midland of W. Australia ...	277	June, 1944	19,914	− 17,435	52	332,900	392,863	− 59,963	Inc. Deb.	101	93	100¼	£4 19 6
	Nigerian	1,900	27.5.44	254,099	− 2,789	12	—	—	—	—	—	—	—	—
	South Africa	13,291	15.7.44	911,388	+ 12,083	15	13,072,996	12,431,530	+ 641,466	—	—	—	—	—
	Victoria	4,774	April, 1944	1,188,999	− 212,162	—	—	—	—	—	—	—	—	—

Note. Yields are based on the approximate current price and are within a fraction of 1/16. Argentine traffics are given in sterling calculated @ 16⅜ pesos to the £

† Receipts are calculated @ 1s. 6d. to the rupee